

ANNUAL REPORT
OF THE
DEPARTMENT OF SANITATION
OF THE
ISTHMIAN CANAL COMMISSION
1908

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FOR THE
YEAR 1908

W. C. GORGAS

Colonel, Medical Corps, U. S. Army
Chief Sanitary Officer

WASHINGTON
GOVERNMENT PRINTING OFFICE
1909

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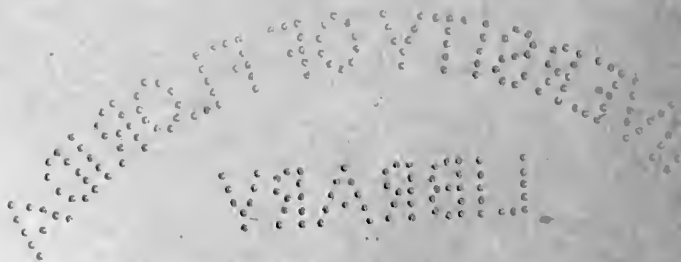
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LETTER OF TRANSMITTAL.

OFFICE OF CHIEF SANITARY OFFICER,
Ancon, Canal Zone, February 25, 1909.

CHAIRMAN ISTHMIAN CANAL COMMISSION,
Culebra, Canal Zone.

SIR: I herewith forward report of the department of sanitation for the calendar year 1908.

I would like to call your attention to several points in this report. In the first place, to the low death rate among employees. The figures for the past five years are as follows:

Year.	Force.	Deaths.	Rate per thousand.
1904.....	6, 213	82	13. 26
1905.....	16, 511	427	25. 86
1906.....	26, 705	1, 105	41. 37
1907.....	39, 343	1, 132	28. 77
1908.....	43, 890	571	13. 01

This means that, out of every thousand employees, we had in 1908 one-third the number die that we had die in 1906, and one-half the number that we had die in 1907.

In this connection it is particularly interesting to note how the death rate among the blacks has fallen:

Year.	Force.	Deaths.	Rate per thousand.
1905.....	13, 482	354	26. 25
1906.....	21, 441	1, 013	47. 24
1907.....	28, 634	953	33. 28
1908.....	31, 507	402	12. 76

This means that in 1906, out of every thousand blacks on our rolls, 47 died; whereas in 1908, out of every thousand on our rolls, only 12 died. The black death rate was slightly less in 1908 than the white death rate. This is the first year, since we have been on the Isthmus, that the black death rate has been smaller than the white death rate. In 1906 the death rate among the blacks was nearly three times as high as that among the whites.

Considering the total population of Panama, Colon, and the Canal Zone, we have the following:

Year.	Population.	Number of deaths.	Rate per thousand.
1904.....	35,000	1,224	52.45
1905.....	42,699	2,793	65.41
1906.....	66,011	3,544	49.10
1907.....	102,133	3,435	33.63
1908.....	120,097	2,983	24.83

This means that out of every thousand people on the zone considerably less than one-half as many died in 1908 as died in 1905.

Taking special diseases, we find that in 1906 we had among the 26,705 employees 69 deaths from dysentery; in 1907, with 39,343 employees, 48 deaths; and in 1908, with 43,890 employees, 16 deaths. That is, with 43,890 employees in 1908 we had less than one-quarter the number of deaths from dysentery than we had among 26,705 employees in 1906.

In 1906 we had from malaria 233 deaths; in 1907, 154 deaths; and in 1908, 73 deaths. That is, with a force more than one-third larger in 1908 we had from malaria less than one-third the deaths that we had in 1906.

In 1907 we had from typhoid fever 98 deaths, and in 1908, with a larger force, we had only 19 deaths.

In the number of deaths from pneumonia there has also been a great fall. In 1906 we had 431 deaths from this disease; in 1907, 328 deaths; and 1908, 93 deaths.

Among white Americans from the United States we had 42 deaths during the year. Exactly one-half of these were from violence. Our death rate from disease among this class was 3.84 per thousand—about the same rate as occurred in the year 1907 in our army.

During the year we had on the Isthmus 2,674 American women and children connected with the commission. The death rate among these was 9.72 per thousand. This is an exceptionally small rate for this class of population.

I consider malaria the best measure of the sanitary work done. In 1906, out of every thousand employees we admitted to our hospitals, from malaria, 821; in 1907, 424; and in 1908, 282. That is, we now have only about one-third the amount of malaria among our employees that we had three years ago.

Beriberi is also a disease that has considerably decreased in the past three years. In 1906 we had 68 deaths in the total population from this disease; in 1907, 53 deaths; and in 1908, 38 deaths.

It has been more than three years now since a case of yellow fever has developed on the Isthmus. The last occurred in November, 1905. The last case of plague occurred in August, 1905. No case of small-pox occurred during the year.

Taken as a whole, the health report for 1908 shows very much better conditions than have occurred in any previous year since we have been on the Isthmus, and the death rates and sick rates among our employees will compare favorably with those of most parts of the United States.

Very respectfully,

WM. C. GORGAS,
Chief Sanitary Officer.



ANNUAL REPORT

OF

DEPARTMENT OF SANITATION, ISTHMIAN CANAL COMMISSION, FOR THE YEAR 1908.

GENERAL STATISTICS.

DEATHS OF EMPLOYEES OF THE ISTHMIAN CANAL COMMISSION AND PANAMA RAILROAD COMPANY.

YEAR 1908.

Color.	Average number of employ- ees.	Total number of deaths from—			Annual average per 1,000.		
		Dis- ease.	Vio- lence.	Total.	Dis- ease.	Vio- lence.	Total.
White.....	12,383	90	79	169	7.27	6.38	13.65
Black.....	31,507	291	111	402	9.24	3.52	12.76
Total.....	43,890	381	190	571	8.68	4.33	13.01

DEATHS IN THE CITIES OF PANAMA AND COLON AND THE CANAL ZONE.

Place.	Average pop- ulation.	Total deaths.	Annual average per 1,000.
Panama.....	37,073	1,292	34.83
Colon.....	15,878	418	26.32
Canal Zone.....	67,146	1,273	18.95
Total.....	120,097	2,983	24.83

NOTE.—Figures relating to number of employees are compiled from the pay rolls of the different months. The population and deaths as given for the cities of Panama and Colon, and for the Canal Zone, in the tables above, include employees and civil population.

Total admissions of employees to hospitals and sick camps,
including those sick in quarters..... 49,709
Average per thousand of employees admitted to hospitals
and sick camps, including those sick in quarters..... 1,132

DEATHS BY COLOR AND SEX.

White:	
Male.....	462
Female.....	208
Black:	
Male.....	1, 514
Female.....	747
Yellow (Chinese):	
Male.....	44
Female.....	5
Unknown.....	3
Total.....	2, 983

DEATHS BY NATIONALITY.

Antigua.....	22	Martinique.....	101
Austria.....	5	Mexico.....	9
Bahama Islands.....	1	Nassau.....	1
Barbados.....	255	Nicaragua.....	4
Bohemia.....	1	Norway.....	1
Colombia.....	163	Panama.....	1, 149
Costa Rica.....	11	Peru.....	8
China.....	48	Philippines.....	1
Chile.....	4	Porto Rico.....	3
Cuba.....	3	Portugal.....	3
Curaçao.....	2	Russia.....	3
Demerara.....	7	Salvador.....	4
Denmark.....	2	Santo Domingo.....	2
Dominica.....	4	Spain.....	177
Ecuador.....	8	Scotland.....	2
England.....	8	Sweden.....	1
Fiji Islands.....	1	St. Kitts.....	3
Fortune Islands.....	7	St. Thomas.....	10
France.....	24	St. Croix.....	1
Guadeloupe.....	29	St. Vincent.....	3
Greece.....	8	St. Martin.....	1
Germany.....	4	St. Lucia.....	60
Grenada.....	26	Syria.....	3
Guiana, British.....	2	Trinidad.....	26
Holland.....	1	Turkey.....	2
Haiti.....	8	Turks Island.....	1
Ireland.....	1	West Indies.....	6
Iceland.....	1	United States.....	94
India.....	5	Venezuela.....	6
Italy.....	27	Not stated.....	36
Jamaica.....	557		
Montserrat.....	17	Total.....	2, 983

DEATHS BY AGES.

Under 1 year.....	680	From 60 to 70 years.....	112
From 1 to 4 years.....	147	From 70 to 80 years.....	36
From 4 to 10 years.....	89	From 80 to 90 years.....	10
From 10 to 20 years.....	147	From 90 to 100 years.....	8
From 20 to 30 years.....	625	From 100 to 110 years....	1
From 30 to 40 years.....	421	Unknown.....	146
From 40 to 50 years.....	376		
From 50 to 60 years.....	185	Total.....	2,983

DEATHS OF ISTHMIAN CANAL COMMISSION AND PANAMA RAILROAD
EMPLOYEES BY NATIONALITY.

Antigua.....	10	Martinique.....	39
Austria.....	1	Mexico.....	2
Bahama Islands.....	1	Montserrat.....	9
Barbados.....	160	Panama.....	13
Colombia.....	12	Portugal.....	1
Costa Rica.....	4	Spain.....	87
Demerara.....	3	St. Lucia.....	7
Dominica.....	2	St. Kitts.....	3
Ecuador.....	1	St. Martin.....	1
England.....	2	St. Vincent.....	2
Fiji Islands.....	1	St. Croix.....	1
Fortune Island.....	7	Trinidad.....	12
France.....	1	Turkey.....	2
Germany.....	1	West Indies.....	2
Greece.....	8	United States.....	46
Grenada.....	7	Venezuela.....	1
Guadeloupe.....	20	Unknown.....	7
Haiti.....	2		
Italy.....	9	Total.....	571
Jamaica.....	84		

CAUSES OF DEATH OF ISTHMIAN CANAL COMMISSION AND
PANAMA RAILROAD EMPLOYEES.

Diseases.	White.	Black.	Total.
Apoplexy.....	1	1	2
Abscess:			
Throat.....		1	1
Perirectal.....		1	1
Periurethral.....		1	1
Angina pectoris.....		1	1
Anæmia, primary.....		2	2
Aneurism of arch of aorta.....		2	2
Arthritis.....		1	1
Appendicitis.....	1	1	2
Brain, acute softening of.....	1		1
Cancer (adenoid carcinoma, involv- ing the gland of abdominal cavity)...	1		1
Cholangitis, acute suppurative.....		1	1
Congestion, pulmonary.....		1	1
Colitis, acute.....		2	2
Debility, general.....		1	1
Dysentery.....	5	11	16
Empyema.....		1	1
Endocarditis.....		1	1
Fever:			
Malarial.....	29	25	54
Hæmoglobinuric.....	13	6	19
Undiagnosed.....	1		1
Typhoid.....	2	17	19
Gastric ulcers with perforation.....	1	1	2
Heart:			
Organic disease of.....	3	8	11
Acute dilatation of.....	1		1
Infection, origin undetermined.....	1	3	4
Intestinal obstructions.....	2	2	4
Liver:			
Abscess of.....	2	3	5
Echinococcus cysts of.....	1		1
Amœbic abscess of.....	1		1
Sarcoma of.....		1	1
Lungs:			
Abscess of.....		1	1
Gangrene of.....		3	3
Hemorrhage of.....		1	1
Lymphangitis.....		1	1

CAUSES OF DEATH OF ISTHMIAN CANAL COMMISSION AND
PANAMA RAILROAD EMPLOYEES—Continued.

Diseases.	White.	Black.	Total.
Meningitis:			
Acute.....	1	5	6
Cerebro-spinal, epidemic.....	1	1	2
Pneumococcic.....		5	5
Mitral insufficiency.....		1	1
Myocarditis.....	1	1	2
Nephritis:			
Acute.....		12	12
Chronic.....	3	16	19
Pneumonia.....	11	82	93
Pyæmia.....	1	5	6
Splenitis, acute.....		1	1
Sarcoma of mesenteric lymphnodes.....		1	1
Septicæmia, purulent infection.....	3	7	10
Stricture of urethra.....		1	1
Tetanus.....	2	4	6
Tuberculosis:			
Pulmonary.....	1	33	34
Miliary.....		5	5
General.....		2	2
Chronic ulcerative.....		1	1
(Pott's disease).....		1	1
(Osteomyelitis).....		1	1
Uræmia.....		3	3
Uncinaria.....		1	1
Ulcer of duodenum.....		1	1
Violence.....	79	111	190
Total.....	169	402	571

LIST OF DEATHS OF WHITE EMPLOYEES FROM THE UNITED STATES,
BY MONTHS, WITH TOTALS AND DEATH AVERAGES PER THOU-
SAND.

JANUARY.

Name.	Occupation.	Time on Isthmus.	Age.	Cause of death.
Hoard, Samuel R...	Panama Railroad.	13 months.	.....	Fever, hæmoglobinu- ric.

FEBRUARY.

Davis, Cleon Leslie.	Engineering and construction de- partment.	45 months.	Gunshot wound, acci- dental.
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MARCH.

Cooper, David.....	Locomotive engi- neer.	2 years....	49	Intestinal obstruction.
Forbes, H. D.....	Mechanical de- partment.	4 months..	33	Malaria, complicated with nephritis.
Perkins, Mrs. P. I..	Teacher.....	....do.....	27	Amœbic dysentery.
Rich, M. P.....	Foreman.....	3 years....	33	Abscess of liver.
Sykes, Henry W...	Machinist.....	.....	48	Hemorrhage and ex- haustion, gastric ul- cers.
Stone, Jean B.....	Engineer.....	22 months.	42	Malarial fever.

APRIL.

Bath, George K....	Engineering and construction de- partment.	4 months..	21	Accidental drowning.
Gerdes, Max J.....	Physician.....	10 months.	39	Organic heart disease.
Loy, Robert Faxon.	Conductor.....	1 year....	35	External violence.
Riddle, Paul L.....	Clerk.....	2½ years...	30	Pulmonary tubercu- losis.

LIST OF DEATHS OF WHITE EMPLOYEES FROM THE UNITED STATES,
BY MONTHS, WITH TOTALS AND DEATH AVERAGES PER THOU-
SAND—Continued.

MAY.

Name.	Occupation.	Time on Isthmus.	Age.	Cause of death.
Brown, John A.....	Engineering and construction department.	10 months.	60	Accidental trauma- tism.
Coggan, Clifford....	Excavation and dredging depart- ment.	....do.....	24	Dynamite explosion.
Nice, Ada J.....	Nurse.....	13 months.	34	Cancer (abdominal).
Roche, Joseph P....	Excavation and dredging depart- ment.	10 months.	34	Dynamite explosion.
Roch, Frank.....	Foreman.....	43 months.	56	Myocarditis, chronic.

JUNE.

Alexandre, John J..	Engineering de- partment.	11 months.	40	Acute dilatation of heart.
Caswell, Arthur O..	Engineering and construction de- partment.	9 months..	19	Accidental trauma- tism (on the Pana- ma Railroad).
O'Shea, Dennis.....	Excavation and dredging depart- ment.	.....	48	Fracture of skull.
O'Brien, Michael J.	Panama Railroad.	8 months..	.....	Cerebral - hemorrhage (probably mur- dered).

JULY.

McKenzie, M. M., alias Murdock.	Engineering and construction de- partment.	4 years....	52	Suicide, gunshot wound of head.
Rose, Charles A....do.....	2½ years...	43	Suicide, hanging.

AUGUST.

Mills, William J....	Mechanic.....	5 months..	46	Drowning, suicide.
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LIST OF DEATHS OF WHITE EMPLOYEES FROM THE UNITED STATES,
BY MONTHS, WITH TOTALS AND DEATH AVERAGES PER THOU-
SAND—Continued.

SEPTEMBER.

Name.	Occupation.	Time on Isthmus.	Age.	Cause of death.
Mickle, Louis.....	Atlantic division..	33 months..	37	Appendicitis, perfora- tive, with general peritonitis.
Townsend, Edwin..	Engineering and construction.	19 months..	33	Accidental trauma- tism (accidental dis- charge of rifle).
Vanderstop, Paul...	Foreman.....	...do.....	29	Malarial fever, E. A., pernicious.
Wagner, Wm. Hen- dricks.	Atlantic division..	3 years....	38	Violence, railroad.

OCTOBER.

Averill, J. H.....	Steam shovel en- gineer.	3 years....	40	Angina pectoris.
Davies, David R...	.....do.....	7 months..	32	Dynamite explosion.
Goodley, William...	Craneman.....	13 months..	21	Do.
McKee, William J...	Machinist.....	4 months..	45	Pernicious malaria.

NOVEMBER.

Vanne, Charles.....	Quartermaster's department.	5 years....	62	Pneumonia, broncho.
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DECEMBER.

Beale, William.....	Panama Railroad.	3 years....	59	Amoebic dysentery.
Curtin, Patrick J...	Engineering and construction.	21 months..	48	Railroad accident.
Caldwell, William (naturalized).	.....do.....	14 months..	40	Lobar pneumonia.
Hummer, James L...	.....do.....	3 years....	24	Dynamite explosion.
Harper, G. H.....	Trainman.....	.....	28	Railroad accident.
House, Amos B....	Engineering and construction.	2 months..	40	Amoebic dysentery.
Korp, John J.....	.....do.....	37 months..	25	Dynamite explosion.
Miller, Inguard J...	Panama Railroad.	4 months..	21	Hæmoglobinuric fe- ver.
Reldy, John J.....	Engineering and construction.	6 weeks...	30	Dynamite explosion.

Average number of white employees from the United States on the Isthmus for the year.....	5, 459
Total number of deaths among white employees from the United States for the year.....	42
Annual average per 1,000 of deaths among white employees from the United States.....	7. 69
Total number of deaths from disease among white employees from the United States for the year.....	21
Annual average per 1,000 of deaths from disease among white employees from the United States.....	3. 84
Total number of deaths from violence among white employees from the United States for the year.....	21
Annual average per 1,000 of deaths from violence among white employees from the United States.....	3. 84

DEATHS OF WHITE AMERICAN WOMEN AND CHILDREN.

MARCH.

Name.	Time on Isthmus.	Age.	Cause of death.
Cate, Charles I.....	3 days.....	5 months....	Capillary bronchitis.
Colegrove, Sybil.....	4 months....	3 years.....	Fracture at base of skull, accident.
Daken (baby).....	3 days.....	3 days.....	Congenital heart disease.
Perkins, Mrs. P. I.....	4 months....	27 years....	Amoebic dysentery.

APRIL.

Boyd (baby).....	1 hour.....	1 hour.....	Premature birth.
Costley, Percival F.....	4 months....	8 years.....	Accidental drowning.

MAY.

Beattie (baby).....	3 days.....	3 days.....	Meningitis.
Nice, Ada J.....	13 months...	34 years....	Cancer (abdominal).
O'Day, Mrs. William...	6 months....	22 years....	Malnutrition, with vomiting of pregnancy.

JUNE.

Smith, Charles Le Roy.	8 months....	11 months...	Convulsions.
Dennis, Wilhelmina Goethals.	3 months....	3 months....	Cholera infantum.

DEATHS OF WHITE AMERICAN WOMEN AND CHILDREN—Cont'd.

JULY.

Name.	Time on Isthmus.	Age.	Cause of death.
Hammond, Marion M..	1 year.....	51 years.....	Uremia, secondary to chronic parenchymatous nephritis.
Womack, Glenys.....	8 months....	13 years.....	Malarial fever.
Warren (baby).....	5 days.....	5 days.....	Congenital marasmus.
Mills, Helen Adams....	4 months....	4 months....	Endocarditis.

AUGUST.

Grant, Pearl May.....	1 year.....	27 years.....	Eclampsia.
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SEPTEMBER.

Belknap, Mrs. A. G....	1 month.....	26 years.....	Pelvic abscess with general peritonitis.
Eberenz, Mable.....	6 months....	2 years.....	Malaria.
Roark, Mrs. F. M.....	2 years.....	31 years.....	Amœbic dysentery.
Williams, Mrs. May-belle T.	.....do	37 years.....	Heart failure (after child-birth).

OCTOBER.

Brennan, Mrs. Hattie..	1 year.....	19 years.....	Puerperal albuminuria and convulsions.
Stevens (baby).....	1 day.....	1 day.....	Premature birth.

NOVEMBER.

Capwell, Guy.....	3 months, 7 days.	15 months...	Tuberculosis, miliary.
Shuck, Mrs. F. E.....	2 months....	32 years.....	Pelvic abscess, septicæmia.

DECEMBER.

Farrell, Maria Rose....	38 days.....	38 days.....	Congenital heart disease.
Persons (baby).....	2 days.....	2 days.....	Congenital debility.

Average number of white American women and children on the Isthmus for the year.	2, 674
Total number of deaths among white American women and children for the year.	26
Annual average per 1,000 of deaths among white American women and children.	9. 72
Total number of deaths from disease among white American women and children for the year.	21
Annual average per 1,000 of deaths from disease among white American women and children.	7. 85
Total number of deaths from violence, parturition, prematurity, etc., among white American women and children.	5
Annual average per 1,000 of deaths from violence, parturition, prematurity, etc., among white American women and children.	1. 87
Average number of white Americans connected with the Isthmian Canal Commission and Panama Railroad for the year (Americans and their families)	8, 133
Total number of deaths from all causes among white Americans connected with the Isthmian Canal Commission and Panama Railroad.	68
Annual average per 1,000 of deaths from all causes among white Americans connected with the Isthmian Canal Commission and Panama Railroad.	8. 36
Total number of deaths from disease among white Americans connected with the Isthmian Canal Commission and Panama Railroad.	42
Annual average per 1,000 of deaths from disease among white Americans connected with the Isthmian Canal Commission and Panama Railroad.	5. 16
Total number of deaths from violence, parturition, prematurity, etc., among white Americans connected with the Isthmian Canal Commission and Panama Railroad.	26
Annual average per 1,000 of deaths from violence, parturition, prematurity, etc., among white Americans connected with the Isthmian Canal Commission and Panama Railroad.	3. 19

CAUSES OF DEATH.

[Embracing deaths among employees of the Isthmian Canal Commission and Panama Railroad Company, and also among the civil population.]

Diseases.	An- con hospi- tal.	Col- on hospi- tal.	Pan- ama.	Col- on.	Zone.	Total.
I. General diseases.						
Typhoid fever (abdominal typhus).....	16	10	6	2		34
Malarial fever.....	6	13	143	33	96	291
Aestivo autumnal malaria.....	40	17	24	2	25	108
Malarial cachexia.....			1		4	5
Hemoglobinuric fever.....	14	10	2		1	27
Measles.....				1		1
Whooping cough.....			1			1
Diphtheria and croup.....	1		2			3
Diphtheria.....			3		1	4
Influenza.....			1			1
Dysentery.....	11	2	46	2	19	80
Amœbic dysentery.....	9	8				17
Leprosy.....			1			1
Beriberi.....		1	32	2	3	38
Purulent infection and septicæmia.....	14	16	2	3	3	38
Rabies.....	1		2			3
Tuberculosis of the larynx.....			1			1
Tuberculosis of the lungs.....	64	34	153	18	39	308
Tuberculosis of the meninges.....		2				2
Abdominal tuberculosis.....			2			2
Pott's disease.....		1				1
Cold abscess and abscess by congestion.....	1					1
Tuberculosis of other organs.....	2	1				3
General tuberculosis.....	15	9	10	3	2	39
Scrofula.....			1			1
Syphilis.....	1	2	6	1	2	12
Cancer and other malignant tumors of the buccal cavity.....			3			3
Cancer and other malignant tumors of stomach and liver.....	2	1	6	1		10
Cancer and other malignant tumors of peritoneum, intestines, and rectum.....	3	1				4
Cancer and other malignant tumors of the female genital organs.....		2	9			11
Cancer and other malignant tumors of the skin.....			1			1
Cancer and other malignant tumors of other organs or of organs not specified....	3	1	5			9
Acute articular rheumatism.....			6		2	8
Chronic rheumatism and gout.....			1			1
Diabetes.....		1	1			2
Leucæmia.....	2					2
Anæmia, chlorosis.....	1	2	4	2	3	12
Other general diseases.....		2			1	
Acute and chronic rheumatism.....			2			2
Other chronic poisoning.....			1			1
Alcoholism.....			8			8

CAUSES OF DEATH—Continued.

Diseases.	An- con hospi- tal.	Co- lon hospi- tal.	Pan- ama.	Co- lon.	Zone.	Total.
<i>II. Diseases of the nervous system and the organs of special sense.</i>						
Encephalitis.....			3			3
Simple meningitis.....	7	1	14	6	5	33
Epidemic cerebro-spinal meningitis.....		3			2	5
Pneumococcus meningitis.....	1	6				7
Other diseases of the spinal cord.....	1					1
Congestion and hemorrhage of the brain.....	4	3	24	10	3	44
Softening of the brain.....	1					1
Paralysis without specified cause.....			6	1		7
General paralysis.....	2		2		2	6
Other forms of mental alienation.....	1	1				2
Epilepsy.....			3		1	4
Convulsions (nonpuerperal, 5 years and over).....				1	4	5
Convulsions (under 5 years).....			5	5	13	23
Tetanus.....	3	3	24	1	3	34
Other diseases of the nervous system.....	1	1				2
<i>III. Diseases of the circulatory system.</i>						
Pericarditis.....	1					1
Acute endocarditis.....	1	2	17		2	22
Septic endocarditis.....		3	5		1	9
Organic diseases of the heart.....	12	8	17	13	20	70
Angina pectoris.....	1		1	2	1	5
Diseases of the arteries (atheroma, aneurism, etc.).....	4	5	1		1	11
Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....			1			1
Hemorrhages.....	1		6	1	1	9
Other diseases of the circulatory system.....			1	3	1	5
<i>IV. Diseases of the respiratory system.</i>						
Diseases of the nasal fossæ.....			1			1
Diseases of the larynx.....				1	1	2
Acute bronchitis.....			14	2	5	21
Chronic bronchitis.....			6	1	1	8
Broncho-pneumonia.....	13	4	15	2	18	52
Pneumonia.....	54	52	62	15	33	216
Pleurisy.....	1	1	10	1		13
Congestion and apoplexy of the lungs.....	1		16			17
Gangrene of the lungs.....	7	1			1	9
Asthma.....			1	1		2
Pulmonary emphysema.....			1			1
Other diseases of the respiratory system (phthisis excepted).....	1		3		2	6

CAUSES OF DEATH—Continued.

Diseases.	An- con hospita- l.	Co- lon hospita- l.	Pan- ama.	Co- lon.	Zone.	Total.
<i>V. Diseases of the digestive system.</i>						
Diseases of the mouth and its adnexa.....					3	3
Diseases of the pharynx.....					1	1
Ulcer of the stomach.....	1		2	1		4
Other diseases of the stomach (cancer ex- cepted).....		1	6		3	10
Diarrhea and enteritis (under 2 years)....	1		169	24	20	214
Chronic diarrhea and enteritis (under 2 years).....			16		4	20
Diarrhea and enteritis (2 years and over)...	5		27	2	8	42
Intestinal parasites.....			1		7	8
Uncinariasis.....	3	3			3	9
Hernia and intestinal obstructions.....	2	1	1		3	7
Other diseases of the intestines.....	2	1	4			7
Hydatid tumors of the liver.....	1					1
Cirrhosis of the liver.....	1	5	19	2	3	30
Biliary calculi.....	1	1	1			3
Other diseases of the liver.....	4	8	6			18
Simple peritonitis.....	1		5	2	2	10
Appendicitis and abscess of the iliac fossa..		3	2			5
<i>VI. Diseases of the genito-urinary system and its adnexa.</i>						
Acute nephritis.....	14	3	19	7	7	50
Bright's disease.....	30	40	36	5	13	124
Other diseases of the kidneys and their ad- nexa.....	1	3		1		5
Calculi of the urinary tract.....			1			1
Diseases of the bladder.....	1		1			2
Diseases of the urethra, urinary abscess, etc.	1	1				2
Metritis.....	1					1
Nonpuerperal diseases of the breast (can- cer excepted).....					1	1
<i>VII. The puerperal state.</i>						
Accidents of pregnancy.....	1	1	4		1	7
Puerperal hemorrhage.....			1		3	4
Other accidents of labor.....					3	3
Puerperal septicæmia.....	2	2	3		2	9
Puerperal albuminuria and convulsions....	2	1		1	2	6
Phlegmasia alba dolens (puerperal).....	1					1
Other puerperal accidents—sudden death.					1	1
<i>VIII. Diseases of the skin and cellular tis- sue.</i>						
Gangrene.....	1		2			3
Acute abscess, phlegmon.....			1			1
Other diseases of the skin and its adnexa..			3			3

CAUSES OF DEATH—Continued.

Diseases.	An-con hospita- l.	Co- lon hospita- l.	Pan- ama.	Co- lon.	Zone.	Total.
<i>IX. Diseases of the organs of locomotion.</i>						
Nontuberculous diseases of the bones.....			1			1
Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted)	1					1
<i>X. Malformations.</i>						
Congenital malformations (stillbirths ex- cepted).....			1		2	3
<i>XI. Early infancy.</i>						
Congenital debility, icterus, and sclerema.	5	1	19	24	72	121
Other diseases peculiar to early infancy...		2	7	11	23	43
Lack of care.....			2		2	4
Premature births.....	3			1	2	6
<i>XII. Old age.</i>						
Senile debility.....			9	9	15	33
<i>XIII. External causes.</i>						
Suicide by poison.....			1			1
Suicide by hanging or strangulation.....	1				2	3
Suicide by drowning.....		1			1	2
Suicide by firearms.....			7		2	9
Suicide by cutting instruments.....		1				1
Other suicides.....					1	1
Fractures.....	5	6	4		15	30
Other accidental traumatisms.....	20	17	6	7	101	151
Burns and scalds.....			4		1	5
Electric shock.....					3	3
Accidental drowning.....			3	2	41	46
Inanition (starvation).....			2			2
Other acute poisoning.....		1	1	3		5
Other external violence.....	1	1			2	4
Legal execution (hanging).....					1	1
Dynamite explosion.....	6				17	23
<i>XIV. Ill-defined diseases.</i>						
Dropsy.....			2		10	12
Sudden death.....			1			1
Causes of death unspecified or ill defined..	2	1	59	14	22	98
Total.....	445	335	1,204	250	749	2,983
Stillbirths.....			160	60	59	219
Grand total.....	445	335	1,304	310	808	3,202

NOTE.—The deaths occurring in Ancon and Colon hospitals result from sick, injury, or other cases taken from the cities of Panama and Colon, or from the Canal Zone, and in the table of general statistics are properly credited to either Panama, Colon, or the Canal Zone.

TABLE SHOWING DISCHARGES AND DEATHS OF EMPLOYEES IN THE HOSPITALS OF THE ISTHMIAN CANAL COMMISSION, FROM ALL CAUSES, FOR THE YEAR 1908.

Diseases.	Dis- charged.	Died.
<i>I. General diseases.</i>		
Typhoid fever (abdominal typhus).....	226	19
Relapsing fever.....	3	0
Malarial fever.....	4,429	9
Æstivo-autumnal malaria.....	5,891	32
Tertian malaria.....	1,737	0
Mixed malaria.....	157	0
Malarial cachexia.....	35	0
Hæmoglobinuric fever.....	64	19
Measles.....	3	0
Diphtheria.....	2	0
Influenza.....	75	0
Dysentery.....	170	5
Bacillary dysentery.....	10	0
Amœbic dysentery.....	85	9
Leprosy.....	3	0
Beriberi.....	2	0
Erysipelas.....	8	0
Other epidemic diseases.....	13	0
Purulent infection and septicæmia.....	19	12
Tuberculosis of the lungs.....	159	34
Tuberculosis of the meninges.....	0	1
Abdominal tuberculosis.....	1	0
Pott's disease.....	3	1
Cold abscess and abscess by congestion.....	41	1
Tuberculosis of other organs.....	20	1
General tuberculosis.....	14	13
Scrofula.....	4	0
Syphilis.....	143	0
Gonorrhea (five years and over).....	137	0
Cancer and other malignant tumors of the buccal cavity.....	3	1
Cancer and other malignant tumors of stomach and liver.....	1	0
Cancer and other malignant tumors of peritoneum, intestines, and rectum.....	1	1
Cancer and other malignant tumors of the female genital organs.....	1	0
Cancer and other malignant tumors of the skin.....	3	0
Cancer and other malignant tumors of other organs or of organs not specified.....	4	0
Other tumors (tumors of the female genital organs excepted).....	9	0
Acute articular rheumatism.....	42	0
Chronic rheumatism and gout.....	18	0
Exophthalmic goiter.....	3	0
Anæmia, chlorosis.....	86	2
Other general diseases.....	298	1
Acute and chronic rheumatism.....	78	0
Chronic lead poisoning.....	8	0
Other chronic poisoning.....	3	0
Alcoholism.....	110	1
Vaccinia.....	1	0

TABLE SHOWING DISCHARGES AND DEATHS OF EMPLOYEES IN THE
HOSPITALS OF THE ISTHMIAN CANAL COMMISSION, FROM ALL
CAUSES, FOR THE YEAR 1908—Continued.

Diseases.	Dis- charged.	Died.
<i>II. Diseases of the nervous system and the organs of special sense.</i>		
Simple meningitis.....	4	3
Epidemic cerebro-spinal meningitis.....	0	2
Pneumococcus meningitis.....	1	5
Progressive locomotor ataxia.....	5	0
Other diseases of the spinal cord.....	2	0
Congestion and hemorrhage of the brain.....	3	2
Softening of the brain.....	0	1
Paralysis without specified cause.....	4	0
General paralysis.....	2	0
Other forms of mental alienation.....	22	2
Epilepsy.....	8	0
Convulsions (nonpuerperal, 5 years and over).....	1	0
Tetanus.....	0	3
Other diseases of the nervous system.....	170	0
Diseases of the eye and its adnexa.....	429	0
Diseases of the ear.....	132	0
<i>III. Diseases of the circulatory system.</i>		
Pericarditis.....	3	1
Pneumococcus pericarditis.....	4	0
Acute endocarditis.....	2	1
Septic endocarditis.....	0	1
Organic disease of the heart.....	30	7
Angina pectoris.....	5	2
Diseases of the arteries (atheroma, aneurism, etc.).....	23	1
Embolism and thrombosis.....	3	0
Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	93	2
Diseases of the lymphatic system (lymphangitis, etc.).....	132	1
Hemorrhages.....	4	4
Other diseases of the circulatory system.....	11	0
<i>IV. Diseases of the respiratory system.</i>		
Diseases of the nasal fossæ.....	80	0
Diseases of the larynx.....	28	0
Diseases of the thyroid body.....	3	0
Acute bronchitis.....	172	0
Chronic bronchitis.....	33	0
Broncho-pneumonia.....	14	12
Pneumonia.....	211	67
Pleurisy.....	50	1
Congestion and apoplexy of the lungs.....	14	0
Gangrene of the lungs.....	0	3
Asthma.....	17	0
Pulmonary emphysema.....	14	0
Other diseases of the respiratory system (phthisis excepted)...	87	1

TABLE SHOWING DISCHARGES AND DEATHS OF EMPLOYEES IN THE
- HOSPITALS OF THE ISTHMIAN CANAL COMMISSION, FROM ALL
CAUSES, FOR THE YEAR 1908—Continued.

Diseases.	Dis- charged.	Died.
<i>V. Diseases of the digestive system.</i>		
Diseases of the mouth and its adnexa.....	49	0
Diseases of the pharynx.....	47	0
Ulcer of the stomach.....	3	1
Other diseases of the stomach (cancer excepted).....	82	1
Diarrhea and enteritis (2 years and over).....	194	1
Intestinal parasites.....	9	0
Uncinariasis.....	36	1
Hernia and intestinal obstructions.....	213	1
Other diseases of the intestines.....	93	3
Hydatid tumors of the liver.....	5	1
Cirrhosis of the liver.....	25	1
Biliary calculi.....	5	0
Other diseases of the liver.....	38	7
Diseases of the spleen.....	5	1
Simple peritonitis.....	1	0
Other diseases of the digestive system (cancer and tuberculosis excepted).....	48	1
Appendicitis and abscess of the iliac fossa.....	60	2
<i>VI. Diseases of the genito-urinary system and its adnexa.</i>		
Acute nephritis.....	38	14
Bright's disease.....	58	13
Other diseases of the kidneys and their adnexa.....	31	8
Calculi of the urinary tract.....	3	0
Diseases of the bladder.....	33	1
Diseases of the urethra, urinary abscess, etc.....	105	2
Diseases of the prostate.....	6	0
Nonvenereal diseases of the male genital organs.....	244	0
Metritis.....	2	0
Uterine tumors (noncancerous).....	1	0
Other diseases of the uterus.....	4	0
Cysts and other tumors of the ovary.....	1	0
Other diseases of the female genital organs.....	5	0
Nonpuerperal diseases of the breast (cancer excepted).....	1	0
Chancroids.....	163	0
<i>VII. The puerperal state.</i>		
Accidents of pregnancy.....	1	0
<i>VIII. Diseases of the skin and cellular tissue.</i>		
Gangrene.....	1	0
Furuncle.....	91	0
Acute abscess, phlegmon.....	212	0
Other diseases of the skin and its adnexa.....	317	0

TABLE SHOWING DISCHARGES AND DEATHS OF EMPLOYEES IN THE HOSPITALS OF THE ISTHMIAN CANAL COMMISSION, FROM ALL CAUSES, FOR THE YEAR 1908—Continued.

Diseases.	Dis- charged.	Died.
<i>IX. Diseases of the organs of locomotion.</i>		
Nontuberculous diseases of the bones.....	33	1
Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted).....	97	1
Amputation.....	9	0
Other diseases of the organs of locomotion.....	154	0
<i>XII. Debility.</i>		
Debility.....	3	0
<i>XIII. External causes.</i>		
Suicide by drowning.....	0	1
Fractures.....	217	7
Dislocation.....	16	2
Other accidental traumatisms.....	674	28
Burns and scalds.....	52	0
Other external violence.....	255	3
<i>XIV. Ill-defined diseases.</i>		
Causes of death unspecified or ill defined.....	0	5
Not sick.....	52	1
X-ray examination.....	1	0
Total.....	19,732	392

CONSOLIDATED HOSPITAL REPORT.

Hospitals.	Re- main- ing Dec. 31, 1907.	Admit- ted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
<i>Ancon Hospital.</i>						
Employees.....	409	13,925	247	11,894	1,555	638
Nonemployees.....	51	1,722	166	1,472	40	95
Insane.....	140	233	32	123	0	218
Total.....	600	15,880	445	13,489	1,595	951
<i>Colon Hospital.</i>						
Employees.....	256	6,324	142	6,040	250	148
Nonemployees.....	61	1,368	194	1,145	28	62
Total.....	317	7,692	336	7,185	278	210
<i>Culebra Hospital.</i>						
Employees.....	1	2	0	2	0	1
Nonemployees.....	8	79	3	68	11	5
Total.....	9	81	3	70	11	6
<i>Palo Seco Leper Asylum.</i>						
Employees.....	0	2	0	2	0	0
Nonemployees.....	14	12	0	4	0	22
Total.....	14	14	0	6	0	22
<i>Taboga Sanitarium.</i>						
Employees.....	43	2,873	0	2,846	0	70
Nonemployees.....	13	711	2	713	0	9
Total.....	56	3,584	2	3,559	0	79
Grand totals:						
Employees.....	709	23,126	389	20,784	1,805	857
Nonemployees.....	147	3,892	365	3,402	79	193
Insane.....	140	233	32	123	0	218
Total.....	996	27,251	786	24,309	1,884	1,268

Cost of subsistence:

Number of days' rations issued to patients.....	386, 803
Total cost of rations issued to patients.....	\$131, 040. 24
Cost of subsistence per patient per day.....	\$0. 3387

Operating expenses:

Number of days' relief furnished.....	386, 803
Total cost of hospitals.....	\$736, 565. 01
Cost per capita per day.....	\$1. 90

CONSOLIDATED SICK CAMP REPORT.

Sick camps.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Tivoli.....	1	2,022	0	1,997	19	7
La Boca.....	13	879	0	876	16	0
Corozal.....	2	1,143	0	999	146	0
Miraflores.....	9	1,155	0	921	239	4
Pedro Miguel.....	13	994	0	815	188	4
Paraiso.....	11	1,736	1	1,317	423	6
Empire.....	21	2,751	1	2,499	270	2
Culebra.....	15	2,547	5	2,059	482	16
Las Cascadas.....	9	1,692	8	1,330	354	9
Bas Obispo.....	9	2,254	1	1,795	444	23
Gorgona.....	10	2,305	1	1,919	387	8
San Pablo.....	2	949	1	766	173	11
Tabernilla.....	18	1,644	0	1,360	299	3
Gatun.....	20	2,314	4	1,772	544	14
Gatun Spillway.....	5	613	0	373	245	0
Cristobal.....	7	682	0	546	137	6
Porto Bello.....	6	1,848	1	1,336	461	6
Total.....	171	27,528	23	22,730	4,827	119

Cost of subsistence:

Number of days' rations issued to patients.....	51, 849
Total cost of rations issued to patients.....	\$14, 040. 71
Cost of subsistence, per patient, per day.....	\$0. 2708

Operating expenses:

Number of days' relief furnished patients.....	51, 849
Total cost of sick camps.....	\$25, 566. 47
Cost per capita, per day.....	\$0. 49

CONSOLIDATED HOSPITAL AND SICK-CAMP REPORT.

	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Hospitals.....	996	27,251	786	24,309	1,884	1,268
Sick camps.....	171	27,528	23	22,730	4,827	119
Total	1,167	54,779	809	47,039	6,711	1,387

Total admissions to hospitals and sick camps..... 54,779
Number of employees sick in quarters..... 5,687

60,466

Less number of patients transferred from sick camps
to hospitals and from hospitals to sanitarium, whose
admissions are duplicated in above figures..... 6,711

Net admissions to hospitals and sick camps,
including number of employees sick in quar-
ters..... 53,755

Cost of subsistence:

Number of days' rations issued to patients..... 438,652
Total cost of rations issued to patients..... \$145,080.95
Cost of subsistence, per patient, per day..... \$0.33

Operating expenses:

Number of days' relief furnished patients..... 438,652
Total cost of hospitals and sick camps..... \$762,131.48
Cost, per capita, per day..... \$1.737

Total cost of hospitals and sick camps, with amounts
received from pay patients deducted..... \$682,133.16

Cost, per capita, per day, with amounts received from
pay patients deducted..... \$1.55

CONSOLIDATED DISPENSARY REPORT.

Class.	White.	Black.	Total.
Employees.....	235, 438	170, 978	406, 416
Nonemployees.....	29, 051	16, 227	45, 278
Total	264, 489	187, 205	451, 694

Operating expenses:

Total cost of dispensaries..... \$166, 182. 07

AVERAGE NUMBER OF EMPLOYEES CONSTANTLY SICK DURING
YEAR IN HOSPITALS, SICK CAMPS, AND QUARTERS.

	White.	Black.	Total.
Ancon Hospital.....	245. 75	244. 98	490. 73
Colon Hospital.....	101. 25	129. 08	230. 33
Palo Seco Leper Asylum.....		. 83	. 83
Taboga Sanitarium.....	54. 26		54. 26
Culebra Hospital.....	. 25	. 07	. 32
Total.....	401. 51	374. 96	776. 47
Average number of employees sick daily in hospitals, per thousand.....	32. 42	11. 90	17. 69

SICK CAMPS.

Tivoli.....	4. 03	3. 64	7. 67
La Boca.....	3. 63	1. 31	4. 94
Corozal.....	5. 22	2. 94	8. 16
Miraflores.....	4. 44	2. 38	6. 82
Pedro Miguel.....	6. 71	4. 59	11. 30
Paraiso.....	5. 23	4. 12	9. 35
Culebra.....	6. 95	7. 26	14. 21
Empire.....	7. 13	4. 70	11. 83
Las Cascadas.....	7. 87	4. 09	11. 96
Bas Obispo.....	8. 38	5. 24	13. 62
Gorgona.....	3. 94	6. 07	10. 01
San Pablo.....	3. 51	2. 59	6. 10
Tabernilla.....	2. 77	6. 98	9. 75
Gatun.....	3. 90	12. 54	16. 44
Gatun (spillway).....	1. 75	1. 63	3. 38
Cristobal.....	3. 87	6. 30	10. 17
Porto Bello.....	5. 33	3. 64	8. 97
Total.....	84. 66	80. 02	164. 68
Average number of employees sick daily in sick camps, per thousand.....	6. 83	2. 54	3. 75

**AVERAGE NUMBER OF EMPLOYEES CONSTANTLY SICK DURING
YEAR IN HOSPITALS, SICK CAMPS, AND QUARTERS—Cont'd.**

QUARTERS.

	White.	Black.	Total.
Tivoli.....	1.16	0.20	1.36
La Boca.....	1.13	.03	1.17
Corozal.....	.97	.....	.96
Miraflores.....	.25	.01	.26
Pedro Miguel.....	1.48	.....	1.48
Paraíso.....	2.39	.09	2.48
Culebra.....	4.08	.71	4.79
Empire.....	5.99	.57	6.56
Las Cascadas.....	1.48	.13	1.61
Bas Obispo.....	1.27	.....	1.27
Gorgona.....	5.01	.88	5.89
San Pablo.....	.50	.....	.50
Tabernilla.....	.82	.08	.90
Gatun.....	1.69	.....	1.69
Gatun (spillway).....	.02	.....	.02
Cristobal.....	5.79	.88	6.67
Porto Bello.....	.78	.....	.78
Total.....	34.81	3.58	38.39
Average number of employees sick daily in quarters, per thousand.....	2.81	.11	.87
Total average number of employees sick daily in hos- pitals, sick camps, and quarters	520.98	458.56	979.54
Total average number of employees sick daily in hos- pitals, sick camps, and quarters, per thousand	42.07	14.55	22.31

**OUTSIDE PATIENTS TREATED IN ISTHMIAN CANAL COMMISSION
HOSPITALS, INCLUDING TABOGA SANITARIUM AND PALO SECO
LEPER ASYLUM, AND AMOUNTS COLLECTED FROM PAY PATIENTS.**

	Number cases treated.	Days relief fur- nished.	Amount paid for treatment.
Patients for whom the Republic of Panama paid 30 cents and 75 cents per day. (Increased to 75 cents per day, effective May 1, 1908.).....	2,467	64,333	\$38,589.60
Patients for whom the zone municipalities paid 30 cents per day.....	305	7,317	2,204.69
Patients who paid 30 cents per day for them- selves.....	679	6,939	2,081.70
Patients from Republic who did not pay.....	330	4,827	.....
Patients from zone who did not pay.....	1,677	25,156	.....
Patients from Republic who paid other prices....	954	8,140	18,948.10
Patients from zone who paid other prices.....	1,636	13,182	18,174.23
Total.....	8,048	129,894	79,998.32

NOTE.—Patients carried from one month to another are considered as separate cases.

**SURGICAL OPERATIONS PERFORMED IN HOSPITALS OF THE ISTHMIAN
CANAL COMMISSION.**

	Number.	Died.
Amputations:		
Arm.....	8	.....
Foot.....	5	1
Forearm.....	1	.....
Hands, both.....	1	.....
Hand.....	3	.....
Hip.....	1	.....
Legs.....	14	.....
Legs, double, trauma.....	2	2
Thigh.....	12	4
Thigh, double.....	3	1
Breast.....	4	.....
Penis and castration.....	1	.....
Adenectomies:		
Inguinal, single.....	324	.....
Inguinal, double.....	10	.....
Inguinal and femoral, double filarial.....	1	.....
Femoral.....	14	.....
Cervical, tuberculous.....	7	.....
Cervical.....	15	.....
Axillary.....	2	.....
Abscess:		
Psoas, lumbar incision.....	2	.....
Ventral.....	1	.....
Adenoma of breast, excision of.....	1	.....
Aneurism, popliteal.....	1	.....
Accouchement force.....	1	1
Curettage, uteri.....	47	1
Curettage following abortion and sepsis.....	1	1
Circumcisions.....	5	.....
Carbuncle of arm (septic pneumonia).....	1	1
Castration.....	3	.....
Castration and lymphangitis.....	1	1
Eye, ear, nose, and throat operations:		
Adenectomy and tonsillotomy.....	26	.....
Advancement, internal rectus.....	2	.....
Abscess, lachrymal sac.....	1	.....
Adenoids.....	3	.....
Cataract, needling.....	28	.....
Cataract extraction.....	13	.....
Cataract extraction and iridectomy.....	2	.....
Cauterization of turbinate bones.....	4	.....
Dacryo-cystitis.....	1	.....
Drainage, left antrum.....	1	.....
Evisceration of eye.....	9	.....
Enucleation of eye.....	11	.....
Furuncle.....	10	.....
Frontal sinus.....	5	.....
Follicular conjunctivitis lids rolled.....	1	.....
Haematoma, auricle.....	2	.....
Iridectomy.....	1	.....
Killiani.....	1	.....
Mule's operation.....	1	.....

**SURGICAL OPERATIONS PERFORMED IN HOSPITALS OF THE ISTHMIAN
CANAL COMMISSION—Continued.**

	Number.	Died.
Eye, ear, nose, and throat operations—Continued.		
Mastoid.....	3	
Mastoid, radical.....	1	
Mastoid and ossiclectomy.....	1	
Myomatous polypi, nasal, removed.....	9	
Necrosis of jaw.....	1	
Necrosed bone, middle ear, removal of.....	1	
Nasal operation.....	1	
Ossiclectomy.....	5	
Paracentesis.....	54	
Pterygium.....	14	
Pterygium, double.....	1	
Polypoid growth, tonsil.....	1	
Peritonsillar abscesses incised.....	3	
Plastic on lid.....	4	
Plastic on face and nose.....	1	
Plastic on face.....	1	
Plastic on nose.....	2	
Plastic for ectropion.....	1	
Resection turbinated.....	1	
Septal resections.....	26	
Submucous resections.....	28	
Straightening of nose.....	1	
Tenotomy, internal rectus.....	4	
Tenotomy, external.....	1	
Tracheotomy.....	2	
Turbinectomy.....	1	
Trachoma, rolled.....	12	
Trachoma expressions.....	2	
Tonsillectomy and adenoids.....	15	
Tonsillotomy.....	42	
Various minor operations.....	593	
Empyema, resection of ribs.....	11	1
Empyema, Beck's resection.....	3	
Empyema (abscess of liver).....	1	1
Fistula in ano.....	8	
Fractures:		
Ankle joint, compound, excision of.....	1	
Arm, compound, wired.....	1	
Compound, wired.....	2	
Carpals, compound.....	1	
Elbow joint, compound.....	3	
Femur, comminuted.....	2	
Femur, wired.....	6	
Femur, compound, wired.....	2	
Foot.....	1	
Forearm.....	1	
Forearm, compound, wired.....	1	
Humerus, compound, wired.....	1	
Jaw, compound, wired.....	1	
Leg, compound, wired.....	3	
Legs, compound, both (dynamite explosion).....	1	1
Radius and ulna, wired.....	1	
Spine, cervical, with laceration of cord.....	1	1
Spine, laminectomy for.....	5	1

SURGICAL OPERATIONS PERFORMED IN HOSPITALS OF THE ISTHMIAN
CANAL COMMISSION—Continued.

	Number.	Died.
Fractures—Continued.		
Small bones, compound.....	3	
Skull.....	3	1
Skull, compound.....	8	4
Skull, with hemorrhage, multiple into brain.....	1	1
Skull, with cerebral hemorrhage.....	1	1
Thigh, compound wired.....	1	
Thighs, double, compound wired.....	1	1
Tibia and fibula, compound wired.....	8	
Tibia and fibula, compound.....	1	
Goiter, excision of.....	2	
Herniotomies:		
Inguinal, single.....	144	
Inguinal, double.....	109	
Inguinal, double and ventral.....	1	
Inguinal, double with femoral hernia.....	1	
Inguinal, strangulated.....	11	
Ventral.....	7	
Femoral.....	3	
Femoral, double.....	1	
Umbilical.....	4	
Hydrocele.....	76	
Hydrocele, radical.....	32	
Hydrocele, scrotal with double resection.....	3	
Hemorrhoids.....	43	
Hemorrhoids, Whitehead's operation.....	45	
Hemorrhoids, clamp and cautery.....	6	
Hemorrhoids, clamp and ligature.....	17	
Hysterectomy, vaginal.....	1	
Laparotomies:		
Appendectomy.....	75	3
Appendectomy with general peritonitis.....	3	
Appendecostomy.....	10	2
Abscess of liver.....	23	7
Abscess of liver, multiple.....	1	
Abscess of liver, suspected.....	1	
Cholecystostomy.....	10	1
Cholecystectomy for gangrenous cholecystitis.....	1	
Cecostomy.....	3	2
Colostomy and resection of rectum and part of sigmoid for carcinoma.....	1	
Closure, fecal fistula.....	3	
Closure, colostomy.....	1	
Cancer of uterus.....	1	
Cirrhosis of liver.....	2	
Ectopic gestation.....	2	
Enterorrhaphy (typhoid perforation).....	7	6
Exploratory, rupture of liver.....	3	2
Exploratory, rupture of diaphragm.....	1	1
Exploratory, hemorrhage.....	1	
Exploratory, stab wound of gall bladder.....	1	
Exploratory, fracture of pelvis with intra abdominal hemorrhage.....	1	1
Exploratory, for liver abscess.....	1	

**SURGICAL OPERATIONS PERFORMED IN HOSPITALS OF THE ISTHMIAN
CANAL COMMISSION—Continued.**

	Number.	Died.
Laparotomies—Continued.		
Exploratory, for traumatic intra peritoneal hemorrhage.....	2	1
Exploratory (inoperable cancer uteri).....	1	.....
Gilliam's round ligament operation.....	1	.....
Hysterectomy.....	14	1
Hysterectomy and appendectomy.....	2	.....
Hysteromyomectomy.....	9	.....
Hysteromyomectomy and appendectomy.....	3	.....
Hemorrhage, traumatic.....	1	.....
Intestinal obstructions.....	2	2
Multiple gastric ulcers.....	1	1
Oophorectomy and appendectomy.....	4	.....
Oophorectomy, double.....	1	.....
Ovariectomy.....	1	.....
Ovariectomy and appendectomy.....	3	.....
Ovarian cyst.....	3	.....
Ovarian cystectomy and appendectomy.....	1	.....
Peritonitis, general echinococcus.....	1	1
Peritonitis, general traumatic, with rupture of liver and spleen.....	1	1
Peritonitis, general appendiceal with appendectomy.....	3	.....
Peritonitis, general appendiceal origin.....	1	.....
Peritonitis, general traumatic rupture.....	1	.....
Peritonitis, exploratory, tuberculous.....	1	1
Peritonitis, exploratory, general perforation.....	1	1
Peritonitis, tuberculous.....	2	.....
Peritonitis, localized appendiceal.....	4	1
Peritonitis, pelvic, spreading tubal.....	1	1
Peritonitis, chronic, with fecal fistula.....	1	.....
Psoas abscess.....	2	.....
Pelvic abscess.....	1	.....
Pelvic abscess, with general peritonitis.....	3	2
Pelvic adhesions.....	1	.....
Pelvic inflammatory disease.....	2	.....
Panhysterectomy.....	2	.....
Round ligament suspensio uteri.....	6	.....
Round ligament suspensio uteri and appendectomy.....	15	.....
Ruptured intestine (traumatic).....	1	.....
Resection cæcum, ascend colon and part of ileum for carcinoma.....	1	1
Rupture of liver.....	1	1
Salpingo-oophorectomy.....	5	.....
Salpingo-oophorectomy, double.....	2	.....
Salpingo-oophorectomy and appendectomy.....	6	.....
Salpingo-myomectomy and appendectomy.....	1	.....
Salpingectomy, double.....	2	.....
Salpingectomy, double, with appendectomy.....	2	.....
Salpingectomy for tubal pregnancy.....	5	.....
Salpingectomy and appendectomy.....	3	.....
Sigmoidopexy.....	4	.....
Suspensio uteri.....	1	.....
Tubal pregnancy and oophorectomy.....	1	.....
Total laparotomies.....	285	.....

**SURGICAL OPERATIONS PERFORMED IN HOSPITALS OF THE ISTHMIAN
CANAL COMMISSION—Continued.**

	Number.	Died.
Nephropexy.....	1	—
Operations following external violence (dynamite explosion and railroad accidents).....	7	7
Osteo myelitis tibia.....	1	—
Perineorrhaphy.....	20	1
Perineorrhaphy and trachelorrhaphy.....	6	—
Pneumonorrhaphy.....	1	—
Perineoplasty.....	6	—
Plastic, harelip.....	2	—
Perineal lithotomy.....	1	—
Repair of ruptured vaginal vault.....	1	—
Resection varicose veins, both legs.....	1	—
Resection of head of radius, tubercular.....	1	—
Resection of wrist, tubercular.....	1	—
Stricture of rectum.....	4	—
Stricture of rectum with fistula.....	2	—
Stricture of urethra.....	21	1
Skin graft.....	4	—
Stab wound of thigh into femoral vein.....	1	1
Supra pubic cystotomy.....	1	—
Trachelorrhaphy.....	15	—
Trephine, gunshot wound of skull.....	1	—
Trephine for caries of calvarium.....	1	—
Trephine for intercranial hemorrhage.....	1	1
Trephine for depressed fracture of skull.....	2	1
Trephine for Jacksonian epilepsy.....	1	—
Trephine for cerebral hemorrhage.....	1	1
Throplasty, Schede's operation.....	1	1
Thyroidectomy.....	2	—
Urethrotomy, internal.....	26	—
Urethrotomy, perineal.....	19	1
Urethrotomy, external.....	3	—
Urethrotomy.....	2	—
Varicocele.....	26	—
Varicose veins.....	3	—
Various other major operations.....	208	3
Various other minor operations.....	2,762	—
Total.....	5,477	84

CONSOLIDATED LABORATORY REPORT OF ALL HOSPITALS.

Blood examinations.....	20, 635
Æstivo autumnal.....	7, 537
Tertian single.....	2, 136
Tertian double.....	147
Tertian and æstivo autumnal.....	126
Quartan.....	1
Æstivo autumnal and crescents.....	12
Differential counts.....	601
Leucocyte counts.....	1, 668
Hæmoglobin estimations.....	479
Hæmoglobin determinations.....	3, 705
For filarial infections.....	111
For malarial infections.....	26
Spirillum obermeieri.....	24
Red blood counts.....	271
White blood counts.....	6
Red and white blood counts.....	138
Widals.....	690
Guaiac turpentine tests for invisible blood.....	1, 128
Stool examinations.....	16, 423
Ascaris lumbricoides.....	972
Uncinaria ova.....	2, 396
Tricocephalus dispar.....	2, 812
Strongyloides intestinalis.....	643
Tænia saginata.....	25
Tænia nana.....	8
Amœba coli.....	1, 115
Amœba dysenteria.....	39
Ciliated monads.....	303
Pus and blood.....	1, 159
Bilharzia.....	19
Oxyuris.....	8
Tubercle bacilli.....	63
Flagellated monads.....	886
Balantidium coli.....	20
Pus and epithelial cells.....	71
Urine examinations.....	23, 799
Albumen.....	6, 798
Albumen and casts.....	2, 161
Sugar.....	9
Albumen and pus.....	1
Urinalyses.....	25
Diazo reactions.....	4
Diazo tests.....	63
Tubercle bacilli.....	28
Microscopical examinations.....	1, 000

Urine examinations—Continued.

Pus and blood.....	91
Bile.....	8
Specific gravity estimations.....	307
Sputum examinations.....	2, 167
Tubercle bacilli.....	270
Pneumococci.....	2
Gonococci.....	43
Miscellaneous:	
Examinations of pus, blood, and tissue.....	105
Hydrocele fluid.....	1
Pleural effusion.....	1
Splenic puncture.....	1
Spinal fluid.....	2
Gastric contents.....	9
Examinations of cerebro-spinal fluid.....	5

PATHOLOGICAL REPORT.^a

Post-mortem examinations.....	295
Paraffin sections, post-mortem.....	2,070
Paraffin sections, operative.....	233
Examinations of pus from eyes (pneumococci).....	2
Microscopical examinations of tissue:	
Post-mortem.....	77
Operative.....	58
Examinations of pleural exudates (pneumococcus).....	3
Lumbar punctures (pneumococcus).....	2
Embalming.....	2
Blood cultures.....	75
Examinations for cerebro-spinal fluids.....	7
Examinations of smears for B. Lepræ (positive 3).....	28
Examination of smears for gonococci.....	2
Examinations of pus.....	2
Examinations of catgut.....	2
Inoculation of guinea pig.....	1
Examinations of exudates, smears, etc.....	37
Wright's stain made, grams.....	10
Frozen sections, from operations.....	57
Agglutination tests.....	83
Examination of dog for rabies (positive 1).....	3
Miscellaneous.....	24

^aAdditional work performed of this nature appears under heading "Board of Health Laboratory."

ANCON HOSPITAL.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Isthmian Canal Commission em- ployees.....	311	13,078	222	11,077	1,507	583
Panama Railroad employees....	98	847	25	817	48	55
Pay patients.....	14	1,091	52	969	25	59
Charity patients.....	37	631	114	503	15	36
Insane patients.....	140	233	32	123	.....	218
Total.....	600	15,880	445	13,489	1,595	951

Average number of days' treatment per patient.....	15
Average number of white employees constantly sick dur- ing year.....	245.75
Average number of black employees constantly sick dur- ing year.....	244.98
Average number of white and black employees constantly sick.....	490.73
Number of days' relief furnished patients.....	251,253
Cost of subsistence per patient per day.....	\$0.276

NATIONALITY.

Class.	Num- ber treated.	Americans.		Other nations.	
		White.	Black.	White.	Black.
Isthmian Canal Commission employees.	13,389	2,495	28	5,112	5,754
Panama Railroad employees.....	945	86	2	71	786
Pay patients.....	1,105	450	2	331	322
Charity patients.....	668	106	3	126	433
Insane patients.....	373	9	.....	33	331
Total.....	16,480	3,146	35	5,673	7,626

DISPENSARY REPORT.

Class.	White.	Black.	Total.
Employees.....	23	215	238
Nonemployees.....	3	41	44
Total.....	26	256	282

OPERATIONS.

(See Report of all Surgical Operations.)

LABORATORY REPORT.

(See Consolidated Laboratory Report.)

COLON HOSPITAL.

Class.	Re- main- ing Dec. 31, 1907.	Admit- ted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Isthmian Canal Commission employees.....	181	4,874	102	4,645	196	112
Panama Railroad employees....	75	1,450	40	1,395	54	36
Pay patients (private).....	15	610	39	555	9	22
Pay patients (municipal).....	33	454	90	365	10	22
Zone charity.....	13	304	65	225	9	18
Total.....	317	7,692	336	7,185	278	210

Average number of days' treatment per patient	13
Average number of white employees constantly sick during year.....	101.25
Average number of black employees constantly sick during year.....	129.08
Average number of white and black employees constantly sick.....	230.33
Number of days' relief furnished patients.....	105,651
Cost of subsistence per patient per day	\$0.309

NATIONALITY.

Class.	Americans.		Other nations.		Total.
	White.	Black.	White.	Black.	
Isthmian Canal Commission employees.	843	11	1,744	2,457	5,055
Panama Railroad employees.....	257	.....	270	998	1,525
Pay patients (private).....	157	.....	235	233	625
Pay patients (municipal).....	9	2	70	406	487
Zone charity.....	43	2	68	204	317
Total.....	1,309	15	2,387	4,298	8,009

DISPENSARY REPORT.

Class.	White.	Black.	Total.
Employees.....	4, 422	3, 384	7, 806
Nonemployees.....	275	592	867
Total.....	4, 697	3, 976	8, 673

OPERATIONS.

(See Report of all Surgical Operations.)

LABORATORY REPORT.

(See Consolidated Laboratory Report.)

CULEBRA HOSPITAL.

Class.	Re- main- ing.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	1	2	.....	2	.....	1
Nonemployees	8	79	3	68	11	5
Total	9	81	3	70	11	6

Average number of days' treatment per patient.....	14. 51
Average number of white employees constantly sick.....	. 25
Average number of black employees constantly sick.....	. 07
Average number of white and black employees constantly sick.....	. 32
Number of days' relief furnished patients.....	1, 306
Cost of subsistence per patient per day	\$0. 208

NATIONALITY.

Class.	Number treated.	Americans.		Other nations.	
		White.	Black.	White.	Black.
Employees	3	.....	.....	2	1
Nonemployees	87	10	.....	27	50
Total	90	10	.....	29	51

DISPENSARY REPORT.

Class.	White.	Black.	Total.
Employees.....	27, 895	19, 895	47, 798
Nonemployees.....	6, 982	3, 597	10, 579
Total.....	34, 885	23, 492	58, 377

SICK CAMP REPORT.

Class.	Re-main-ing.	Ad-mitted.	Died.	Dis-charged.	Trans-ferred.	Re-main-ing Dec. 31, 1908.
Employees.....	15	2, 547	5	2, 059	482	16

Average number of days' treatment per patient..... 1. 48

Average number constantly sick: White, 6.95; black, 726.... 14. 21

Employees in quarters:

Days excused for quarters..... 1, 778

New patients excused for quarters..... 582

Average number of days' treatment per patient..... 3. 06

Average number constantly sick: White, 4.08; black,
0.71..... 4. 79

PALO SECO LEPRO ASYLUM.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Ex-employees.....	1			1		
Pay cases.....	11	10		3		18
Isthmian Canal Commission employees.....		2		2		
Charity cases.....	2	2				4
Total.....	14	14		6		22

Average number of days' treatment per patient.....	221
Average number of white employees constantly sick.....	0
Average number of black employees constantly sick.....	0. 83
Average number of white and black employees constantly sick.....	. 83
Number of days' relief furnished patients.....	6, 186
Cost of subsistence per patient per day.....	\$0. 344

NATIONALITY.

Class.	Num- ber treated.	Americans.		Other nations.	
		White.	Colored.	White.	Colored.
Ex-employees.....	1				1
Pay cases.....	21				21
Isthmian Canal Commission employees.....	2				2
Charity cases.....	4				4
Total.....	28				28

TABOGA SANITARIUM.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	43	2,873	.....	2,846	.....	70
Families of employees, pay patients.....	12	687	.....	690	.....	9
Nonemployees, pay patients.....	.....	6	.....	6	.....	.....
Children under 4 years, no pay..	1	18	2	17	.....	.....
Total.....	56	3,584	2	3,559	.....	79

Average number of days' treatment per patient.....	6. 15
Average number of white employees constantly sick.....	54. 26
Number of days' relief furnished patients.....	22, 407
Cost of subsistence per patient per day.....	\$0. 645

NATIONALITY.

Class.	Num- ber treated.	Americans.		Other nations.	
		White.	Black.	White.	Black.
Employees.....	2, 916	2, 107	.....	809	.....
Families of employees, pay patients....	699	692	.....	7	.....
Nonemployees, pay patients.....	6	6	.....	.....	.....
Children under 4 years, no pay.....	19	19	.....	.....	.....
Total.....	3, 640	2, 824	.....	816	.....

SANTO TOMAS HOSPITAL.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Dis- charged.	Died.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Pay cases.....	27	964	953	24	.....	14
Charity cases.....	160	3, 417	3, 106	299	.....	172
Isthmian Canal Commission employees.....	.....	10	10	.....	.....	.....
Panama Railroad employees.....	.....	5	5	.....	.....	.....
Total.....	187	4, 396	4, 074	323	.....	186

Average number of days' treatment per patient.....	11. 17
Average number of Commission employees constantly sick.....	. 13
Average number of patients constantly sick.....	194. 31
Number of days' relief furnished patients.....	73, 924
Cost of subsistence per patient per day (silver).....	\$0. 75

NATIONALITY.

Class.	Num- ber treated.	Americans.		Other nations.	
		White.	Colored.	White.	Colored.
Pay cases.....	991	10	.....	326	655
Charity cases.....	3,577	67	4	959	2,547
Isthmian Canal Commission employees.....	10	1	.....	6	3
Panama Railroad employees.....	5	2	.....	1	2
Total.....	4,583	80	4	1,292	3,207

OPERATIONS.

	Number.	Died.
Major operations.....	444	25
Minor operations.....	675	.....

DISPENSARY REPORT.

Class.	White.	Black.	Total.
Natives.....	272	764	1, 036
Foreigners.....	182	221	403
Total.....	454	985	1, 439

**TIVOLI DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	4, 399	7, 552	11, 951
Nonemployees.....	1, 319	722	2, 041
Total.....	5, 718	8, 274	13, 992.

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Admit- ted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	1	2, 022	....	1, 997	19	7

Average number of days' treatment per patient 1. 50

Average number constantly sick, white, 4.03; black, 3.64... 7. 67

Excused for quarters:

Days excused for quarters..... 504

New patients excused for quarters..... 256

Average number of days' treatment per patient 1. 96

Average number constantly sick, white, 1.16; black, 0.20. 1. 36

**LA BOCA DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	11, 763	12, 553	24, 316
Nonemployees.....	589	646	1, 235
Total.....	12, 352	13, 199	25, 551

LA BOCA DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS—Continued.

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Admit- ted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	13	879	....	876	16	.....

Average number of days' treatment per patient 1. 82

Average number constantly sick, white, 3.63; black, 1.31... 4. 94

Excused for quarters:

Days excused for quarters..... 428

New patients excused for quarters..... 217

Average number days' treatment..... 1. 97

Average number constantly sick, white, 1.13; black, 0.03. 1. 16

COROZAL DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	9, 145	5, 510	14, 655
Nonemployees.....	1, 073	620	1, 693
Total.....	10, 218	6, 130	16, 348

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	2	1, 143	....	999	146	.....

Average number of days' treatment per patient.....	2.48
Average number constantly sick, white, 5.22; black, 2.94...	8.16
Excused for quarters:	
Days excused for quarters....	398
New patients excused for quarters.....	164
Average number of days' treatment per patient.....	2.42
Average number constantly sick: White, 0.97; black, 0.	.97

MIRAFLORES DISPENSARY AND SICK CAMP, AND EMPLOYEES
EXCUSED FROM WORK FOR QUARTERS.

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	7,708	4,634	12,342
Nonemployees.....	86	82	168
Total.....	7,794	4,716	12,510

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	2	1,155	....	921	239	4

Average number of days' treatment per patient.....	2.30
Average number constantly sick: White, 4.44; black, 2.38..	6.82
Excused for quarters:	
Days excused for quarters.....	104
New patients excused for quarters.....	50
Average number of days' treatment per patient.....	2.08
Average number constantly sick: White, 0.25; black, 0.01.....	.26

**PEDRO MIGUEL DISPENSARY AND SICK CAMP, AND EMPLOYEES
EXCUSED FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	6, 107	3, 064	9, 171
Nonemployees.....	709	372	1, 081
Total.....	6, 816	3, 436	10, 252

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mit- ted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	13	994	....	815	188	4

Average number of days' treatment, per patient..... 3. 78

Average number constantly sick, white, 6.71; black, 4.59... 11. 30

Excused for quarters:

Days excused for quarters..... 545

New patients excused for quarters..... 259

Average number of days' treatment, per patient..... 2. 10

Average number constantly sick, white, 1.48; black, 0. 1. 48

**PARAISO DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	9, 717	6, 723	16, 440
Nonemployees.....	1, 683	1, 195	2, 878
Total.....	11, 400	7, 918	19, 318

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mit- ted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees	11	1, 736	1	1, 317	423	6

Average number of days' treatment, per patient.....	1. 59
Average number constantly sick, white, 5.23; black, 4.12...	9. 35
Excused for quarters:	
Days excused for quarters.....	922
New patients excused for quarters.....	373
Average number of days' treatment, per patient.....	2. 47
Average number constantly sick, white, 2.39; black, 0.09.....	2. 47

EMPIRE DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	45, 019	28, 724	73, 743
Nonemployees.....	148	108	256
Total.....	45, 167	28, 832	73, 999

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees	21	2,751	1	2, 499	270	2

Average number of days' treatment per patient	1. 15
Average number constantly sick, white, 7. 13; black, 4. 70 .	11. 83
Excused for quarters:	
Days excused for quarters.....	2, 336
New patients excused for quarters.....	930
Average number of days' treatment per patient	2. 51
Average number constantly sick, white, 5.99; black, 0.57 .	6. 56

**LAS CASCADAS DISPENSARY AND SICK CAMP, AND EMPLOYEES
EXCUSED FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	17, 039	6, 371	23, 410
Nonemployees.....	3, 793	2, 275	6, 068
Total.....	20, 832	8, 646	29, 478

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees	9	1,692	8	1, 330	354	9

Average number of days' treatment per patient	2. 20
Average number constantly sick, white, 7. 87; black, 4. 09 .	11. 96
Excused for quarters:	
Days excused for quarters.....	629
New patients excused for quarters.....	238
Average number of days' treatment per patient	2. 64
Average number constantly sick, white, 1.48; black, 0.13 .	1. 61

**BAS OBISPO DISPENSARY AND SICK CAMP, AND EMPLOYEES
EXCUSED FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	19, 448	13, 266	32, 714
Nonemployees.....	1, 541	676	2, 217
Total.....	20, 989	13, 942	34, 931

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	9	2, 254	1	1, 795	444	23

Average number of days' treatment per patient..... 1. 95

Average number constantly sick: White, 8.38; black, 5.24.. 13. 62

Excused for quarters:

Days excused for quarters..... 487

New patients excused for quarters..... 228

Average number of days' treatment per patient..... 2. 13

Average number constantly sick: White, 1. 27; black, 0. 1. 27

**GORGONA DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	21, 679	12, 878	34, 557
Nonemployees.....	4, 113	1, 558	5, 671
Total.....	25, 792	14, 436	40, 228

**GORGONA DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS—Continued.**

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	10	2, 305	1	1, 919	387	8

Average number of days' treatment per patient.....	1. 22
Average number constantly sick: White, 394; black, 6.07...	10. 01
Excused for quarters:	
Days excused for quarters.....	2, 170
New patients excused for quarters.....	755
Average number of days' treatment per patient.....	2. 87
Average number constantly sick: White, 5.01; black, 0.88.	5. 89

**SAN PABLO DISPENSARY AND SICK CAMP, AND EMPLOYEES
EXCUSED FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	8, 284	7, 321	15, 605
Nonemployees.....	226	674	900
Total.....	8, 510	7, 995	16, 505

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	2	949	1	766	173	11

Average number of days' treatment per patient.....	2. 20
Average number constantly sick: White, 3.51; black, 2.59...	6. 10
Excused for quarters:	
Days excused for quarters.....	186
New patients excused for quarters.....	92
Average number of days' treatment per patient	2. 02
Average number constantly sick: White, 0.50; black, 0. .50	

**TABERNILLA DISPENSARY AND SICK CAMP, AND EMPLOYEES
EXCUSED FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	7, 490	8, 693	16, 183
Nonemployees.....	739	745	1, 484
Total.....	8, 229	9, 438	17. 667

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	18	1, 644	....	1, 360	299	3

Average number of days' treatment per patient.....	2. 01
Average number constantly sick: White, 2.77; black, 6.98...	9. 75
Excused for quarters:	
Days excused for quarters.....	330
New patients excused for quarters.....	95
Average number of days' treatment per patient.....	3. 47
Average number constantly sick: White, 0.82; black, 0.08. .90	

GATUN DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	12, 419	14, 524	26, 943
Nonemployees.....	2, 243	373	2, 616
Total.....	14, 662	14, 897	29, 559

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31 1908.
Employees.....	20	2, 314	4	1, 772	544	14

Average number of days' treatment per patient..... 2. 25

Average number constantly sick: White, 3.90; black, 12.54.. 16. 44

Excused for quarters:

Days excused for quarters..... 628

New patients excused for quarters..... 282

Average number of days' treatment per patient..... 2. 22

Average number constantly sick: White, 1.69; black, 0. 1. 69

SPILLWAY SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	5	613	....	373	245	.....

Average number of days' treatment per patient.....	3. 00
Average number constantly sick: White, 1.75; black, 1.63...	3. 38
Excused for quarters:	
Days excused for quarters.....	8
New patients excused for quarters.....	6
Average number of days' treatment per patient.....	1. 33
Average number constantly sick: White, 0.02; black, 0. .02	

**CRISTOBAL DISPENSARY AND SICK CAMP, AND EMPLOYEES EXCUSED
FROM WORK FOR QUARTERS.**

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	14, 286	8, 825	23, 111
Nonemployees.....	3, 426	1, 004	4, 430
Total.....	17, 712	9, 829	27, 541

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	7	682	....	546	137	6

Average number of days' treatment per patient.....	3. 49
Average number constantly sick: White, 3.87; black, 6.30..	10. 17
Excused for quarters:	
Days excused for quarters.....	2, 453
New patients excused for quarters.....	1, 018
Average number of days' treatment per patient.....	2. 40
Average number constantly sick: White, 5.79; black, 0.88.....	6. 67

PORTO BELLO DISPENSARY AND SICK CAMP, AND EMPLOYEES EX-
CUSED FROM WORK FOR QUARTERS.

DISPENSARY.

Class.	White.	Black.	Total.
Employees.....	8,610	7,061	15,671
Nonemployees.....	106	988	1,094
Total.....	8,716	8,049	16,765

SICK CAMP.

Class.	Re- main- ing Dec. 31, 1907.	Ad- mitted.	Died.	Dis- charged.	Trans- ferred.	Re- main- ing Dec. 31, 1908.
Employees.....	6	1,848	1	1,386	461	6

Average number of days' treatment per patient.....	1.82
Average number constantly sick: White, 5.33; black, 3.64..	8.97
Excused for quarters:	
Days excused for quarters.....	281
New patients excused for quarters.....	142
Average number of days' treatment per patient.....	1.97
Average number constantly sick: White, 0.78; black, 0..	.78

BOARD OF HEALTH LABORATORY.

Bacteriological examinations of—	
Municipal water supplies.....	425
Water from condensers.....	171
Water from demijohns.....	25
Water from tank carts.....	102
Water from rivers.....	64
Water from spring.....	2
Water from reservoirs and rivers.....	15
Water from cold storage, Cristobal.....	2
Aerated waters.....	44
Throat cultures (diphtheria suspects).....	35

Bacteriological examinations of—Continued.

Blood cultures.....	370
Cultures from autopsies.....	34
Charcoal filter.....	1
Glanders suspect (negative).....	1
Pus.....	16
Cresilic acid.....	1
Caramel (sarsaparilla).....	2
Exudates.....	4
Phenol sodique.....	1
Stools.....	8
Smears (diphtheria suspects).....	54
Urine.....	8
Sputum.....	3
Chemical analyses of—	
Rock.....	1
“Meatox”.....	1
Flour.....	1
Rum.....	43
Sand.....	1
Water (brackish).....	1
Baking powder.....	1
Can of squash.....	1
Water.....	6
Solution, 80 per cent crude carbolic acid.....	1
Metallic zinc.....	1
Chemical examination of—	
Wire screening.....	1
Paints.....	3
Mineral oil.....	2
Gasoline.....	1
Bay rum.....	1
Urine.....	2
Milk.....	4
Turpentine.....	1
Linseed oil.....	1
Wine.....	7
Creosote oil.....	1
Breakfast sirup.....	1
Stomach contents.....	7
Powder.....	1
Soil.....	5
Coffee.....	1
Car oil.....	1
Flour.....	1
Phinotas oil.....	1

Chemical examination of—Continued.

Dynamite exploders.....	1
Flavoring extracts.....	1
Kerosene.....	1
Benzine (naphtha).....	2
Foodstuffs.....	1
Examination of—	
Leper suspects (positive, 7).....	29
Pus.....	42
Urine.....	19
Blood.....	13
Coffee.....	1
Quinine-urea tablets.....	1
Sewage.....	1
Phinotas oil.....	1
Powder from district physician.....	1
Aerated waters for preservatives.....	7
Rock.....	8
Bean seedlings..... lot..	1
Sputum.....	4
Stools.....	6
Dogs, rabies suspects (positive, 3).....	19
Rat.....	1
Rat poison.....	1
Alkalinity and chlorine content in water.....	3
Cow (post-mortem).....	1
Fæces.....	2
Larvæ.....	1
Rat virus.....	1
Determinations of—	
Chlorine in water.....	299
Preservatives in aerated waters.....	6
Total solids in water.....	82
Specific gravity of soils.....	2
Alkalinity of condenser and tap water from Bas Obispo.....	2
Manganese in drillings of steam-shovel parts.....	4
Assays of—	
Kerosene.....	2
Crude oil.....	1
Magnesia cement..... lot..	1
Sanitary analyses of water—	
From Rio Grande.....	17
From Camacho.....	16
From Brazos.....	16
From Gorgona.....	16
From Paraiso.....	1
From Gatuncilla River.....	2
Miscellaneous.....	11

Agglutination reactions (positive, 34).....	950
Autopsies.....	352
Bodies embalmed.....	69
Tissue and neoplasms reported.....	134
Sections of tissue prepared.....	5, 895
Frozen sections cut.....	35
Identification of mosquitoes.....lots..	2
Standardization of clinical thermometers.....do..	3
Preventive treatment of persons bitten by rabid dogs.....	22
Post-mortems of cows.....	2
Post-mortem of cat (rabies suspect).....	2
Positive.....	1
Post-mortem of calves.....	4
Post-mortem examination of dogs.....	2
Sections of tissue reported.....	46
Analyses of wire screening.....	2
Medico-legal post-mortem examinations.....	3
Surgical pathological tissue and neoplasms reported.....	67

REPORT OF VACCINATIONS.

Cristobal.....	17
Bohio.....	58
Gorgona.....	93
Matachin.....	92
Empire.....	98
Culebra.....	364
Corozal.....	4
Panama.....	2, 588
Porto Bello.....	34
Colon.....	472
San Pablo.....	47
Pedro Miguel.....	10
Las Savannas.....	14
Gatun.....	39
Vaccinations by quarantine officials at ports of Panama and Colon, and vaccinations at ports of departure or en route.	32, 785
Total vaccinations.....	36, 715

STATEMENT OF ISSUES OF QUININE.

[Kilo=2.2046 pounds avoirdupois.]

Total issues.	Kilograms.	Pounds avoirdupois.
January.....	274. 933	601. 416
February.....	57. 500	122. 187
March.....	15. 225	32. 353
April.....	68. 871	150. 655
May.....	48. 600	106. 312
June.....	36. 681	80. 241
July.....	203. 900	446. 031
August.....	75. 675	165. 539
September.....	50. 400	110. 250
October.....	314. 050	686. 184
November.....	55. 977	122. 449
December.....	23. 310	51. 350
Total.....	1, 225. 122	2, 674. 967
Average issue per month.....	102. 093	222. 914

SANITATION—CITY OF PANAMA.

Anopheles brigade:

Linear feet of ditches cleaned.....	1, 860, 840
Square yards of land cleaned.....	161, 444
Square feet of weeds and grass cut.....	2, 537, 238
Holes filled.....	489
Wells filled.....	21
Cubic yards of earth used.....	4, 012
Closets oiled.....	789
Closets cleaned.....	137
Pools oiled.....	5, 182
Cesspools oiled.....	245
Pools disinfected.....	22
Cesspools cleaned.....	66
Cesspools disinfected.....	129
Tanks destroyed.....	1
Tanks oiled.....	17
Trenches oiled.....	74
Linear feet of trenches oiled.....	401, 210
Linear feet of trenches disinfected.....	5, 000
Wells oiled.....	193
Yards oiled.....	3, 919
Yards disinfected.....	22

Anopheles brigade—Continued.

Mosquito oil used.....	barrels..	216
Phinotos oil used.....	do.....	10. 5
Loads of refuse removed from the city.....		6, 957
Daily average number of carts at work.....		10
Number of days carts worked.....		256
Linear feet of drains cleaned and disinfected....		30, 600
Linear feet of ditches dug.....		4, 550
Number of drains oiled.....		101
Loads of sand for tank and storehouse.....		260
Loads of cinders hauled.....		14
Chloride of lime used.....	pounds..	2, 040

Disinfection brigade:

Number of houses disinfected and fumigated for beriberi.....		64
Number of houses disinfected and fumigated for diphtheria.....		3
Number of houses disinfected and fumigated for leprosy.....		1
Number of houses disinfected and fumigated for rabies in dog.....		1
Number of houses disinfected and fumigated for tuberculosis.....		172
Number of houses disinfected and fumigated for typhoid.....		7
Number of houses disinfected and fumigated for pernicious malaria.....		27
Rooms fumigated and disinfected for beriberi....		265
Rooms fumigated and disinfected for diphtheria		8
Rooms fumigated and disinfected for tuberculosis		655
Rooms fumigated and disinfected for typhoid fever.....		24
Rooms fumigated and disinfected for pernicious malaria.....		6
Cubic feet disinfected and fumigated.....	5, 055, 245	
Cubic feet of walls, etc., whitewashed.....	660, 000	
Catch basins disinfected (52 times).....		200
Cesspools cleaned by contract.....		43
Cesspools filled by contract.....		1
Materials used—		
Alcohol.....	gallons..	146
Chloride of lime.....	pounds..	89, 059
Bichloride of mercury.....	do.....	52
Phinotas oil.....	barrels..	8
Crude oil.....	do.....	6
Flour.....	do.....	25
Matches.....	packages..	21
Newspapers.....	bundles..	33
Pyrethrum.....	pounds..	1, 013

*Disinfection brigade—Continued.**Materials used—Continued.*

Sulphur.....	pounds..	10, 351
Formaldehyde.....	gallons..	1½
Pyrol fume.....	do.....	20
Lime (unslaked).....	pounds..	1, 100
Nails.....	do.....	10
Soap chips.....	do.....	10

Inspections of houses and yards:

Houses with water connections.....	times..	26, 873
Houses without water connections.....	do.....	3, 200
Houses with sewer connections.....	do.....	23, 673
Houses without sewer connections.....	do.....	3, 017
Traps in yards connected with sewers.....	do.....	26, 567
Traps in yards not connected with sewers.....	do.....	2, 834
Wells on premises.....	do.....	385
Tanks on premises.....	do.....	157
Water-closets in good condition.....	do.....	26, 041
Water-closets in bad condition.....	do.....	3, 014
Yards with drainage good.....	do.....	26, 330
Yards with drainage bad.....	do.....	3, 977
Number of water containers destroyed.....		602
Persons notified to keep their premises in sanitary condition.....		2, 898
Persons notified to connect with water and sewer.....		57
Persons warned as to insanitary condition of yards.....		1, 304
Places where mosquito larvæ were found.....		5, 539
Persons warned for having mosquito larvæ.....		1, 617
Persons notified as to conditions governing the renewal of lease of Panama Railroad lands.....		27

Sick inspection:

Average number of boarding houses and hotels inspected (daily).....		26
Number of persons reported ill.....		156
Urinary analyses made (positive 3).....		41

New buildings:

Number of plans submitted to health officer and approved.....		130
---	--	-----

Destruction of dogs:

Number of dogs poisoned.....		973
Poison used (strychnine).....	grams..	347
Bait used.....	pounds..	187

Destruction of rats:

Number of rats caught and cremated.....		11, 086
Rat traps distributed.....		173
Average number of rat traps in use.....		354
Live rats caught and sent to laboratory.....		730
Bait used (cheese, ham, bread, etc.)... pounds..		1, 367
Rat poison used.....	do.....	626

SANITATION—COLON.

[Including Cristobal and Mount Hope.]

Medical inspection:

White employees reported to health office.....	42
White employees inspected by health office physician.....	42
Cases reported by Colon medical inspectors.....	313
Cases reported by health office physician.....	199
Cases sent to hospital.....	68

Quinine (prophylactic) dispensed to laborers:

Total number of 5-grain tablets dispensed.....	223, 716
Total doses solution dispensed.....	87, 120
Average number of doses of tablets dispensed daily.....	729
Average number of doses of solution dispensed daily.....	303

Sanitation—Colon city:

Cans of garbage removed.....	1, 107, 321
Cans of night soil removed.....	192, 539
Night-soil buckets retired.....	1, 215
Loads of yard garbage removed.....	2, 785
Miscellaneous loads removed.....	117
Tanks removed.....	17
Tanks remaining.....	6
Loads of old lumber carted.....	162
Tanks oiled.....	7
Yards cleaned.....	122
Buildings cleaned.....	2
Passages cleaned.....	78
Water-closets cleaned.....	80
Cesspools cleaned.....	9
Square yards of streets cleaned.....	11, 597, 238
Notices to abate nuisances sent out.....	1, 243
Number of nuisances abated.....	848
Vacant lots cleaned.....	7
Rats caught and killed.....	5, 624
Houses cleaned.....	23
Private properties cleaned.....	648
Cubic yards of ditches made.....	75
Dogs killed.....	389
Cats killed.....	28
Cars fumigated.....	1
Houses fumigated.....	1
Cubic feet fumigated.....	15, 000
Ninth street dump maintained.....	

Mosquito work—Colon:

Square yards of vegetation removed.....	2, 997, 481
Number of water receptacles overturned.....	743
Water receptacles collected.....	25, 978
Square yards of pools oiled.....	117, 297
Linear feet of gutters removed.....	6, 968
Number of persons fined for breeding mosquitoes .	5
Linear feet of drains made.....	117, 279
Linear feet of drainage cleaned and maintained...	1, 293, 173
Crab holes worked.....	11, 913
Crabs killed.....	9, 494
Water receptacles treated.....	302, 018

Houses:

Number of plans approved.....	113
Permits issued to occupy.....	62
Houses condemned.....	68
Houses demolished.....	1

Water and sewers:

Number of connections made.....	260
Number of houses remaining without connections.	97
Total number of connections completed to date...	456
Number of outstanding permits.....	38

Sanitation—Cristobal:

Number of cans of garbage removed.....	114, 154
Loads of yard garbage removed.....	1, 659
Miscellaneous loads carted.....	85
Square yards of street cleaned.....	7, 058, 000
Square yards of street sprinkled.....	3, 446, 752
Rats caught and killed.....	1, 915
Dogs killed.....	3

Mosquito work—Cristobal:

Square yards of vegetation removed.....	26, 733
Water receptacles collected.....	5, 885
Crab holes oiled.....	44, 070
Breeding places eradicated.....	3
Square yards of pools oiled.....	98, 395
Number of feet of drainage cleaned and maintained	6, 494
Crab holes worked.....	2, 540
Crabs killed.....	397
Water receptacles treated.....	73, 439

Fumigation—Cristobal:

Tug fumigated.....	1
Cubic feet fumigated.....	43, 100
Vessel fumigated.....	1

Screening—Cristobal:

Screening of wards repaired.....	18
Screening of houses repaired (times).....	418

Sanitation—Mount Hope:

Number of cans of garbage removed.....	24,701
Cans of night soil removed.....	20,634
Miscellaneous loads carted.....	292
Square yards of streets cleaned.....	23,874
Loads of yard garbage removed.....	349
Closets disinfected.....	215
House fumigated	1

Mosquito work—Mount Hope:

Square yards of vegetation removed.....	805,916
Water receptacles overturned.....	5,087
Water receptacles collected.....	10,039
Tanks oiled.....	3,115
Breeding places eradicated.....	44
Square yards of pools oiled.....	77,460
Barrels spigoted.....	67
Barrels covered.....	67
Water receptacles treated.....	55,541

Drainage—Mount Hope:

Linear feet of drains made and ditches dug.....	28,937
Linear feet of drains cleaned and maintained.....	81,767

Mount Hope cemetery:

Square yards of vegetation removed.....	113,931
Square yards of grading made.....	7,961
Linear feet of new drainage made.....	1,536
Linear feet of drainage cleaned.....	291
Grave markers painted.....	2,045
Interments.....	200
Disinterments.....	3

SANITATION—CANAL ZONE.

ANCON.

Grass cut and removed.....square yards..	917,773
Swamp filled in.....cubic yards..	12,927
Tile drain laid.....linear feet..	16,479
New stone, cement, and concrete ditches laid..do....	8,650
Old ditches cleaned and graded.....do....	191,886
Closets cared for (daily).....	23
Closets erected.....	2
Garbage cans emptied (daily).....	151
Night-soil cans emptied (daily).....	78
Houses fumigated (10).....cubic yards..	7,841
Metallic screen repaired (houses).....	328
Ground prepared for use of mower.....square yards..	104,393
New ditches dug.....linear feet..	1,430
Closet pits dug (14).....cubic yards..	54
Closet pits filled in (1).....do....	5

LA BOCA.

Grass cut and removed.....	square yards..	318, 634
Swamps filled in.....	cubic yards..	4, 630
Old ditches cleaned and graded.....	linear feet..	52, 722
Closet pits dug (7).....	cubic yards..	23
Closet pits filled in (6).....	do.....	9
Closets cared for (daily).....		34
Garbage cans emptied (daily).....		204
Night-soil cans emptied (daily).....		82
Metallic screen repaired (houses).....		131
New stone, cement, and concrete ditches laid, linear feet.....		403
Houses fumigated (5).....	cubic yards..	2, 961
New ditches dug.....	linear feet..	6, 014
Ground prepared for use of mower....	square yards..	22, 000

COROZAL.

Grass cut and removed.....	square yards..	2, 855, 537
New ditches dug.....	linear feet..	13, 411
Old ditches cleaned and graded.....	do.....	95, 488
Closets cared for (daily).....		30
Garbage cans emptied (daily).....		90
Closets erected.....		18
Night-soil cans emptied (daily).....		4
Houses fumigated (23).....	cubic yards..	22, 503
Metallic screen repaired (houses).....		477
Swamp filled in.....	cubic yards..	158
Tile drain laid.....	linear feet..	11, 419
Closet pits dug (24).....	cubic yards..	133
Closet pits filled in (3).....	do.....	15

MIRAFLORES.

Grass cut and removed.....	square yards..	226, 219
Old ditches cleaned and graded.....	linear feet..	110, 294
Closets cared for (daily).....		30
Closets erected.....		28
Garbage cans emptied (daily).....		73
Night-soil cans emptied (daily).....		26
New ditches dug.....	linear feet..	3, 213
Tile drain laid.....	do.....	7, 507
Closet pits dug (76).....	cubic yards..	265
Houses fumigated (42).....	do.....	4, 037
Metallic screen repaired (houses).....		22

PEDRO MIGUEL.

Grass cut and removed.....	square yards..	339, 502
New ditches dug.....	linear feet..	2, 589
Old ditches cleaned and graded.....	do....	105, 171
Closet pits dug (134).....	cubic yards..	359
Closet pits filled in (64).....	do....	164
Closets cared for (daily)		94
Garbage cans emptied (daily).....		310
Night-soil cans emptied (daily)		73
Metallic screen repaired (houses)		251
Closets erected.....		14
Houses fumigated (24).....	cubic yards..	3, 930
Swamp filled in.....	do....	247
Tile drain laid.....	linear feet..	161

PARAISO.

Grass cut and removed.....	square yards..	903, 044
New ditches dug.....	linear feet..	2, 468
Old ditches cleaned and graded.....	do....	147, 073
Closets cared for (daily)		74
Garbage cans emptied (daily).....		257
Night-soil cans emptied (daily)		50
Houses fumigated (9).....	cubic yards..	2, 818
Metallic screen repaired (houses)		272
Closet pits dug (97).....	cubic yards..	469
Swamps filled in.....	do....	879
Tile drain laid.....	linear feet..	5, 179
Closet pits filled in (24).....	cubic yards..	88

CUCARACHA.

Grass cut and removed.....	square yards..	7, 384
Old ditches cleaned and graded.....	linear feet..	35, 470
Closets cared for (daily)		82
Garbage cans emptied (daily).....		210
Tile drain laid.....	linear feet..	756

CULEBRA.

Grass cut and removed.....	square yards..	1, 485, 862
Swamp filled in.....	cubic yards..	1, 306
New ditches dug.....	linear feet..	10, 585
Tile drain laid.....	do....	8, 617
New stone, cement, and concrete ditches laid..	do....	5, 591
Old ditches cleaned and graded.....	do....	127, 020
Closets cared for (daily)		28
Garbage cans emptied (daily)		812
Night-soil cans emptied (daily)		56

Metallic screen repaired (houses).....	507
Houses fumigated (8).....cubic yards..	5,737
Ground prepared for use of mower.....square yards..	140,331
Closet pits dug (2).....cubic yards..	25
Closet pits filled in (1).....do....	8

EMPIRE.

Grass cut and removed.....square yards..	2,232,723
Old ditches cleaned and graded.....linear feet..	214,728
Closet pits dug (27).....cubic yards..	171
Closet pits filled in (23).....do....	96
Closets cared for (daily).....	117
Garbage cans emptied (daily).....	1,033
Night-soil cans emptied (daily).....	102
Houses fumigated (6).....cubic yards..	68,223
Metallic screen repaired (houses).....	324
Ground prepared for use of mower.....square yards..	17,340
Swamp filled in.....cubic yards..	11,612
Closets erected.....	11
New ditches dug.....linear feet..	1,197

LAS CASCADAS.

Grass cut and removed.....square yards..	1,425,854
Brush cut and removed.....do....	8,180
Swamps filled in.....cubic yards..	934
New ditches dug.....linear feet..	3,130
Tile drain laid.....do....	13,345
New stone, cement, and concrete ditches laid...do....	2,869
Old ditches cleaned and graded.....do....	118,837
Closet pits dug (68).....cubic yards..	345
Closet pits filled in (19).....do....	19
Closets cared for (daily).....	78
Garbage cans emptied (daily).....	398
Night-soil cans emptied (daily).....	133
Houses fumigated (16).....cubic yards..	8,160
Metallic screen repaired (houses).....	516
Swamp drained.....square yards..	900

BAS OBISPO.

Grass cut and removed.....square yards..	1,260,692
Old ditches cleaned and graded.....linear feet..	87,540
Closet pits dug (86).....cubic yards..	297
Closet pits filled in (92).....do....	159
Closets cared for (daily).....	85
Garbage cans emptied (daily).....	265
Metallic screens repaired (houses).....	222

New stone, cement, and concrete ditches laid, linear feet.....	691
Houses fumigated (33).....cubic yards..	9, 893
New ditches dug.....linear feet..	872
Tile drain laid.....do....	1, 872
Swamps filled in.....cubic yards..	81

MATACHIN.

Grass cut and removed.....square yards..	162, 959
New ditches dug.....linear feet..	12, 266
Old ditches cleaned and graded.....do....	119, 865
Closet pits dug (28).....cubic yards..	105
Closets cared for (daily).....	65
Closets erected.....	29
Garbage cans emptied (daily).....	155
Night-soil cans emptied (daily).....	46
Metallic screen repaired (houses).....	35
Swamp filled in.....cubic yards..	998
Houses fumigated (12).....do....	4, 483
Closet pits filled in (3).....do....	3
New stone, cement, and concrete ditches laid, linear feet.....	33

GORGONA.

[Including Mamel.]

Grass cut and removed.....square yards..	1, 071, 338
New ditches dug.....linear feet..	16, 558
New stone, cement and concrete ditches laid...do....	338
Old ditches cleaned and graded.....do....	100, 950
Closets cared for (daily).....	70
Garbage cans emptied (daily).....	475
Night soil cans emptied (daily).....	151
Metallic screen repaired (houses).....	384
Swamps filled in.....cubic yards..	13, 999
Tile drain laid.....linear feet..	1, 565
Closet pits dug (21).....cubic yards..	84
Houses fumigated (4).....do....	4, 700
Closet pits filled in (14).....do....	20

SAN PABLO.

Grass cut and removed.....square yards..	1, 013, 753
Swamp filled in.....cubic yards..	2, 108
New ditches dug.....linear feet..	3, 884
Old ditches cleaned and graded.....do....	58, 337
Closet pits dug (57).....cubic yards..	163
Closet pits filled in (43).....do....	85
Closets cared for (daily).....	50

Garbage cans emptied (daily)	129
Night soil cans emptied (daily)	54
Metallic screen repaired (houses)	193
Closets erected	12
Houses fumigated (11).....cubic yards..	11, 434

TABERNILLA.

Grass cut and removed.....square yards..	966, 561
Swamp filled in.....cubic yards..	1, 673
New ditches dug.....linear feet..	9, 495
Tile drain laid.....do.....	1, 307
New stone, cement and concrete ditches laid...do....	839
Old ditches cleaned and graded.....do.....	161, 551
Closet pits dug (45).....cubic yards..	129
Closet pits filled in (27).....do.....	46
Closets cared for (daily)	40
Garbage cans emptied (daily).....	290
Night soil cans emptied (daily).....	49
Metallic screen repaired (houses)	89
Houses fumigated (29).....cubic yards..	57, 539

BOHIO.

Grass cut and removed.....square yards..	166, 356
Old ditches cleaned and graded.....linear feet..	135, 043
Closet pits dug (30).....cubic yards..	145
Closets cared for (daily).....	64
Closet pits filled in (21).....cubic yards..	59
Closets erected.....	6
Garbage cans emptied (daily).....	69
Night soil cans emptied (daily).....	11
Metallic screen repaired (houses).....	40
Houses fumigated (18).....cubic yards..	7, 193

GATUN.

Grass cut and removed.....square yards..	1, 022, 144
Swamp filled in.....cubic yards..	11, 873
New ditches dug.....linear feet..	7, 001
Tile drain laid.....do.....	6, 029
Old ditches cleaned and graded.....do.....	44, 040
Closet pits dug (112).....cubic yards..	387
Closet pits filled in (59).....do.....	131
Closets cared for (daily).....	77
Garbage cans emptied (daily).....	359
Metallic screens repaired (houses).....	305
Closets erected.....	4
Houses fumigated (3).....cubic yards..	968

PORTO BELLO.

Grass cut and removed.....	square yards..	401, 323
New ditches dug.....	linear feet..	1, 289
Tile drain laid.....	do....	1, 647
Old ditches cleaned and graded.....	do....	20, 449
Closets cared for (daily).....		13
Closets erected.....		10
Garbage cans emptied (daily).....		58
Swamp filled in.....	cubic yards..	85
Night-soil cans emptied (daily).....		18
New stone, cement, and concrete ditches laid, linear feet.....		355
Metallic screen repaired (houses).....		24

RECAPITULATION.

Grass cut and removed.....	square yards..	16, 777, 658
Swamp filled in.....	cubic yards..	63, 510
New ditches dug.....	linear feet..	95, 402
Tile drain laid.....	do....	75, 883
New stone, cement, and concrete ditches laid.....	do....	20, 769
Old ditches cleaned and graded.....	do....	1, 926, 464
Ground prepared for use of mower.....	square yards..	284, 064
Garbage cans emptied (daily).....		5, 338
Night-soil cans emptied (daily).....		933
Closets cared for (daily).....		1, 054
Closet pits dug (828).....	cubic yards..	3, 154
Closet pits filled in (400).....	do....	907
Closets erected.....		134
Houses fumigated (253).....	cubic yards..	161, 019
Metallic screen repaired (houses).....		4, 120
Brush cut and removed.....	square yards..	8, 180
Swamp drained.....	do....	900

NOTE.—Beginning September 1, 1908, most of the work under the above heads was turned over to the quartermaster's department and the division engineers, to be performed on account for the sanitary department.

General cleaning:

Number of square yards of streets cleaned.....	165, 550
Water-closets cleaned.....	9
Water-closets disinfected.....	46
Water-closets condemned.....	4
Yards inspected (times).....	1, 770
Yards cleaned.....	810
Barrels of garbage removed.....	204, 630
Loads of yard garbage carted.....	1, 161

General cleaning—Continued.

Loads of street sweepings removed.....	28
Loads of sand carted.....	1, 016
Loads of grass removed and burned.....	82
Loads of cinders carted.....	46
Loads of old lumber carted.....	205
Loads of tree trunks removed.....	89
Miscellaneous loads carted.....	441
Cesspools cleaned.....	6
Cesspools disinfected.....	33
Cesspools filled.....	20
Cesspools oiled.....	50
Houses torn down.....	9
Houses condemned.....	5
Houses inspected (times).....	919
Houses cleaned.....	3
Nuisances reported.....	433
Nuisances abated.....	243
Trees cut down.....	173
Tree trunks and stumps removed.....	423
Buildings cleaned.....	4
Linear feet of board walk made.....	281
Linear feet of board walk repaired.....	250
Square yards of street repaired.....	632
Linear yards of water front cleaned.....	4, 080
Vacant lots cleaned.....	122
Linear feet of drainpipe laid.....	66
Linear feet of drainpipe removed.....	22
Loads of coral carted.....	302
Closets oiled.....	39
Closets disinfected.....	10
Closets filled.....	3
Plans for closets approved.....	23
Persons notified to keep yards in sanitary condition..	611
Loads of earth carted.....	78
Sewers cleaned.....	1
Average number of carts at work.....	2
Passageways cleaned.....	95
Patios inspected.....	60
Patios cleaned.....	25

Mosquito brigade:

Number of square yards of vegetation removed.....	8, 000
Barrels repaired (old and new).....	1, 962
Barrel covers made.....	1, 500
Barrels spigoted.....	2, 023
Barrels overturned.....	1, 901
Barrels oiled.....	260
Barrels destroyed.....	473

Mosquito brigade—Continued.

Tanks spigoted.....	12
Tanks repaired.....	290
Tanks covered.....	18
Tanks oiled.....	40
Tanks destroyed.....	12
Wells covered.....	5
Wells cleaned.....	4
Wells oiled.....	211
Wells dug.....	1
Wells filled.....	41
Crabs killed.....	1,705
Crab holes worked.....	2,900
Crab holes filled.....	4,155
Crab holes oiled.....	1,755
Mosquito-breeding places eradicated.....	422
Linear feet of drains made.....	2,285
Linear feet of drains oiled.....	2,690
Linear feet of drains repaired.....	1,650
Linear feet of drains cleaned.....	7,523
Persons fined for violating sanitary ordinances.....	66
Square yards of swamp filled.....	722
New drains made.....	8
Daily average number of men at work.....	13
Square yards of grass cut and burned.....	210,400
Square yards of brush cut and burned.....	43,000
Catch basins oiled.....	266
Catch basins cleaned.....	31
Gutters repaired.....	116
Gutters removed.....	8
Water receptacles collected.....	5,415
Water receptacles overturned.....	1,836
Holes filled.....	412
Cubic yards of earth used.....	1,155
Cubic yards of coral used.....	144
Square yards of pools oiled.....	14,650
Square yards of swamp drained.....	293,990
Drains oiled.....	22
Persons warned for having mosquito larvæ on premises.....	315
<i>Destruction of rats:</i>	
Number of rats caught and cremated.....	52
Average number of rat-traps used.....	12
Dead rats found.....	87
<i>Material used in work:</i>	
Spigots.....	2,007
Copper cloth (screening)..... feet..	6,237
Mosquito oil..... barrels..	77
Chloride of lime..... pounds..	204

Material used in work—Continued.

Bichloride of mercury	pounds..	8
Sulphur	do.....	50
Lime	barrels..	3
Turpentine	gallons..	3
Paint	do.....	1
Arsenic	pounds..	4
Wire staples	packages..	30
Tacks	pounds..	64
Tar	gallons..	35
Lumber	square feet..	5, 850
Nails	pounds..	475

QUARANTINE SERVICE.

[Ports of Panama, Ancon, Colon, and Cristobal.]

Number of vessels inspected and passed	1, 001
Number of vessels detained in quarantine	4
Number of vessels fumigated on arrival	7
Number of vessels fumigated prior to sailing	48
Total number of pieces of baggage disinfected	1, 627
Total number of crew inspected	73, 942
Total number of passengers inspected	58, 799
Total number of persons inspected	132, 741
Total number of persons vaccinated at ports of arrival because of compulsory vaccination law	13, 621
Total number of persons vaccinated at ports of departure or en route, because of the compulsory vaccination law ..	19, 205
Total number of persons vaccinated because of compulsory vaccination law	32, 826
Total number of persons held in quarantine at the detention stations to complete period of incubation of yellow fever and plague	3, 806
Total number of persons held in quarantine on board vessels to complete period of incubation of yellow fever and plague	1, 597
Total number of persons held in quarantine	5, 403
Total number of passengers landed from foreign ports:	
Cabin	16, 993
Steerage	26, 605
	43, 598
Total number of passengers embarked for foreign ports:	
Cabin	15, 344
Steerage	16, 679
	32, 023
Total apparent increase for the year from foreign ports:	
Cabin	1, 649
Steerage	9, 926
	11, 575

Total number of persons arriving from coast towns on small launches and sailing craft.....	19,884
Total number of persons leaving for coast towns on small launches and sailing craft.....	15,993
Total apparent increase for the year from coast towns.....	3,891
Total number of persons landed.....	63,482
Total number of persons embarked.....	48,016
Total apparent increase for the year.....	15,466
Number of immigrants recommended for rejection.....	141
Number of certificates issued to outgoing passengers.....	538
Number of persons refused certificates because of trachoma.....	42
Total number of bills of health issued.....	50
Total number of bills of health viséed.....	368
Total number of circulars relative to malarial fever distributed.....	22,000

QUARANTINE SERVICE—BOCAS DEL TORO.

Number of vessels inspected and passed.....	474
Number of crew inspected.....	8,677
Number of passengers inspected.....	5,565
Total number of persons held to complete period of incubation for yellow fever.....	373
Number of vessels sailing during the year.....	462
Number of vessels entering during the year.....	484
Number of persons vaccinated.....	43

PERSONNEL REPORT.

[Average number of employees per month for the year.]

Chief sanitary office.....	33	Empire Dispensary.....	13
Property division, sanitary department.....	10	Las Cascadas Dispensary.....	9
Quarantine service.....	31	Bas Obispo Dispensary....	10
Health office, Panama.....	90	Gorgona Dispensary.....	12
Health office, Colon.....	137	San Pablo Dispensary....	4
Director of hospitals.....	18	Tabernilla Dispensary....	5
Ancon hospital.....	489	Gatun Dispensary.....	13
Colon Hospital.....	242	Cristobal Dispensary.....	7
Culebra Hospital.....	15	Porto Bello Dispensary...	4
Ancon Dispensary.....	3	Taboga Sanitarium.....	29
La Boca Dispensary.....	5	Palo Seco Leper Asylum..	9
Corozal Dispensary.....	3	Zone sanitation.....	779
Miraflores Dispensary.....	3	Santo Tomas Hospital....	6
Pedro Miguel Dispensary..	4		
Paraiso Dispensary.....	9		
		Total.....	1,929

TABLE OF MALARIAL CASES AMONG EMPLOYEES, IN HOSPITALS,
WITH AVERAGES, ETC., 1908.

Months.	Discharged.		Died.		Total died.	Total cases.	Annual average per 1,000 of deaths.	Annual average per 1,000 of cases.	Number of employees.
	White.	Black.	White.	Black.					
January.....	325	317	2	2	4	646	1.10	178	43,390
February.....	341	232	0	1	1	574	.27	156	44,039
March.....	304	220	8	1	9	533	2.49	147	43,276
April.....	270	137	0	0	0	407	.00	109	44,753
May.....	251	143	2	1	3	397	.80	106	44,816
June.....	358	269	3	0	3	630	.78	165	45,662
July.....	787	933	3	2	5	1,725	1.33	460	44,938
August.....	769	747	5	4	9	1,525	2.44	413	44,225
September.....	643	760	4	3	7	1,410	1.86	375	45,058
October.....	912	904	2	4	6	1,822	1.65	501	43,593
November.....	732	722	4	2	6	1,460	1.72	420	41,713
December.....	626	611	1	5	6	1,243	1.74	362	41,219
Total.....	6,318	5,995	34	25	59	12,372	1.34	282	43,890



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